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# Crude Proration Is Ended Overnight

## Oil At Bargain Prices Is Reason For About-Face

### By A. F. Hinton

STAFF REPRESENTATIVE

TULSA, Nov. 24.

FOR a week after the Prairie cut the price of crude, Nov. 8, nothing more than an almost inconsequential increase in runs betokened any forthcoming change in the situation. While producers felt the bottom of crude prices had been reached, they were still worried as to the duration of proration.

Then, between suns, so to speak, everything was changed; proration became a memory, and the large buyers started out on a campaign to corral all the oil in sight, and even all that was hidden away. On Friday things were much as they had been since last June. On Monday the stuff was off, and the pack of erstwhile proraters was in full cry after petroleum.

What was the reason for this sudden change of front on the part of the principal purchasers? How come, and why? Do they believe the general oil situation is so improved, from a Mid-Continent standpoint, that that well-known chimera, a shortage of crude, is just around the corner? Have they cut down the enormous stocks of crude with which they were credited when proration of runs was announced? Have they any particular sympathy for the producer whose Christmas loomed lean and hungry as long as he could not sell his oil? One "No" will do for all these questions.

The answer is, in the writer's opinion, that high-grade Oklahoma crude is such a bargain at $1 a barrel that almost any habitual buyer recognizes that fact, and cannot forbear to buy largely of it while the buying is good and as long as he has a foot of storage room in his supposedly full tanks. No telling, says the big buyer to himself, how long this is going to last, and we'd better get ours before those other fellows have it all tied up. Out comes the card index in which offered production had been listed for the past five months, and forth goes the solicitor to see what can be done about it.

Producers who have been lying awake nights wondering and worrying about how they were going to dispose of their oil, now can't get any sleep by reason of having constantly to answer the telephone to listen to the pleadings of someone wanting to buy their oil. "Yes, sir, we can start laying a line to your lease tomorrow. Will we take all your production? I'll say we will, and your stored oil, too."

The next question is, what is going to be the result of this sudden right about face on the part of the crude purchasers? It has already caused so much good feeling among producers that pessimists in Tulsa are as scarce

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## Conditions Do Not Warrant New Drilling, However

### By Warren C. Platt

TULSA, Nov. 24.

WHILE all the talk and promise of an early upward movement in the price of crude and presumably all petroleum markets is most welcome, nevertheless it is to be fervently hoped that the leaders of the industry, who by their competition make the market, will exercise the greatest caution in their competitive efforts for oil.

Anything like a runaway market such as was had two years ago will not be to the best interest of the industry. A surplus condition can too easily be created in the next six months which would bring the industry back to where it has been the past year. Few companies indeed, even among the largest ones, could withstand another low price era without a comfortable period of satisfactory prices intervening and that period must be more than a few months.

There is no doubt but, as production declines and consumption increases, there will be a real battle for crude oil. The new alignments in the oil industry promise the biggest fight in its history. But it must also be recognized that there is the largest number of Independent producers in history, that a great many wells are on the sand and can be quickly drilled in to sizeable production, and that a stiff upward price movement coming too early will undoubtedly bring in more oil than the market can handle.

Another danger to be watched is that a strong and unwarranted upward price movement will work two ways on the refining and marketing branch of the industry. First, it may cause refiners to increase their runs too much and, second, the upward swing may be faster than a similar movement of the tank wagon market. At present the tank wagon market is right down to hard bottom, compared either with the tank car or the crude markets. It is working the greatest hardship on refiners with marginal contracts in effect. Any advance in the crude market must in justice to all, be soon followed by a tank wagon advance in proportion.

We all want higher prices and we all want good prices but we certainly don't want, nor can the industry stand, in the next year or two, another surplus of crude and refinery production. There is plenty of crude oil in this country and a great plenty can be easily produced for many years to come but it should come out no faster than the market can absorb it.

We know the larger interests want to move conservatively, but history has shown that, in their desire to get oil from this lease, and that field and the other pool, they can easily overlook the condition of the whole industry while absorbed in their more immediate desires. No one or more interests can arbitrarily say just when a certain advance

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(Hinton article concluded)

as tool-dressers at a geological convention, and right there is where the danger lies. The most likely result of the sudden scramble for oil will be that the average producer will get the idea that he and all his brethren are out of the woods at last, and that all there is to do now is to drill and drill. If that takes place, the best we can look for is a repetition of what happened in 1923, when too much drilling brought forth too much oil, and that in turn brought forth entirely too much proration and several crude cuts.

The fact of the matter is that the Mid-Continent producer has it in his power now to place himself in a very strong position, and to reap profit as a fruit of his wisdom, if he will only keep his head during the present excitement and lay off drilling until such time as finds Oklahoma oil really at a premium. If drilling can be held down to its present level until the spring, there is now no reason to doubt that a brisk demand for Mid-Continent crude will have again become manifest and that the price will be materially higher than it is now.

Executives of the big companies are unanimous in advising producers to go slow for a time yet in drilling, and they are emphatic in warning that their present buying program does not indicate an improvement in the general situation. While they do not explain why all of them started out together buying oil right and left, we have already done that for them. While they already have great quantities of crude, and are not selling any more of it now than they were two weeks ago, they still cannot resist the temptation to buy it while it is so cheap, nor can they bear to refrain from doing so while others are going after it.

The Prairie officials, for instance, state their company is selling less oil right now than at any time in its history and that they can see no immediate relief. There has been no diminution of California shipments to Atlantic refineries, nor is it probable that there will be for some time to come. These officials fix next June as the time when demand for Mid-Continent crude will again begin to manifest itself, and they earnestly urge producers to sit steady in the boat at least until that time.

Sinclair Crude Oil Purchasing Co. also is engaged just now in the hunt for oil and new connections, but its officials issued warnings similar in every way to those of the Prairie. They state a general resumption of drilling now, with its consequent bringing in of new production, would in all likelihood bring about a repetition of the overproduction which put such a blight on the industry early this year. They say to all producers: "Go slow, and hold Oklahoma's production down until the oil is needed."

Cosden, another of the oil hunters, is extending its lines and taking all the

(Platt article concluded)

will bring out a certain amount of oil. Competition will have to determine, but let that competition be sane and farseeing. If it is, the whole industry can ride along on an even keel with reasonable profit to all branches for many years to come.

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oil it can handle. J. S. Cosden, president of the company, was in Tulsa this week, and the only statement he gave out for publication was to the effect that he hoped producers would not "drill their heads off" under the urge of lifted proration and stimulated oil purchases. And so it goes.

In the way they are going after oil at present, the big companies are doing a lot to offset any good that might come from their warnings and advice. It seems to an unbiased observer it would have been much better if they had increased their runs gradually until they had them back at 100 per cent, then cleaned up the stored oil on leases before starting an active search for new connections. In this way, the transition from proration to full runs would have been much less violent, and would have attracted less notice. Also, it would have pulled the producer gradually out of his distress, instead of yanking him at one fell swoop from the depths of despair to the heights of happiness, and would not have imbued him so thoroughly with the idea that all his troubles were over. Too bad they couldn't have handled it that way, but of course, some of them would have come out of the gradual transition stage to find that others had in the meantime sewed up all the oil for themselves.

We have a great deal of respect for the Oklahoma producer, and we believe he will take full advantage of the present opportunity to strengthen his position by continuing to operate on a conservative basis. He has been through the mill. All he has to do now is to sit tight, and it cannot be very long before he will reap the benefits of his patience and foresight.

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EVANSTON, ILL., Nov. 26.—Frank B. Sprague has resigned as assistant city sales manager of the Sinclair Refining Co., to accept the position of sales manager for the Traction Lubricating Co., manufacturers of solidified oils, with offices at 69 W. Washington street, and factory at 943 S. Highland avenue.

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CASSVILLE, MO., Nov. 22.—Horine-Salyer Oil Co., jobbers here, opened its new filling station on Nov. 10. There were 894 gallons of gasoline dispensed through two pumps on that day by A. G. Salyer, manager, Mr. Sturgis and Miss Marie Salyer. Mr. Salyer reports that the weather is favorable and that his company is enjoying a good business.

## Makes New Connection

DETROIT, Nov. 26.—M. G. Billingslea, formerly general sales manager of the Indian Refining Co. at New York City, has become associated with the White Star Refining Co. here, as vice-president. Mr. Billingslea has had extensive and varied experience in the oil business embracing a period of 15 years in both refinery and national distribution. The White Star Refining Co. manufactures and markets Staroline gasoline, motor oils and power plant lubricants and it is to the distribution of these products that Mr. Billingslea will give his attention.

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## Phoney Order Taker

CLEVELAND, Nov. 27.—J. E. Schneiter of the Schneiter-Luster Oil Co., Taylorville, Ill., wants to warn oil jobbers of the middle west particularly against a man giving various names representing himself to be agent for a sign company at Baltimore.

This man made the Schneiter-Luster Co. very attractive prices on electric signs, demanding a 40 per cent deposit with the order and offering a ten per cent discount for cash. The oil company made an order and gave a draft in payment. Upon investigation they found no sign company of this name in Baltimore and discovered the draft had been cashed at Peoria by the same man under another name.

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READING, MASS., Nov. 26.—Stanley, Jr., weighing nine pounds, was born on August 8 to Mr. and Mrs. Stanley R. Stembridge. Mr. Stembridge is president and treasurer of the S. R. Stembridge Co., jobbers of petroleum products in this city.

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MOORESTOWN, N. J.,Nov. 26.—A fourth McCoy service station was opened on Nov. 17 in this city by Harry A. McCoy, of Riverside, N. J. The station handles Texaco gasoline and oils and carries Goodyear tires and automobile accessories.

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FLAT ROCK, MICH., Nov. 26.—The Red Indian Oil Co., organized in June, reports a good business in Indian gasoline and Havoline oi's, which it handles exclusively, according to I. B. Dworman, salesman for the Indian Refining Co. at Detroit.

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MARION, IND., Nov. 26.—The Red Mill Service Station Co. opened a service station, modeled after an old Dutch mill, at Washington and First streets here, on Nov. 24.

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READING, MASS., Nov. 26.—The S. R. Stembridge Co., jobbers, recently purchased a lot on Woburn St. here and will begin the construction of a modern service station. This will make the second one for the company. The company contemplates opening a Boston office in the spring.

# THIS WEEK'S OIL NEWS SUMMARIZED

## Production

**(Production News, pp. 65-80)**

ONLY two minor changes in crude oil prices occurred over the week. These were in the Lance Creek and Osage grades, Wyoming, each increased 10 cents.

From the Mid-Continent conditions now existing, it is pretty well established that the bottom of the market has been reached for the present. Elsewhere in this issue it is stated that there is something like competition again in Oklahoma for connections and premiums are even being talked of again.

It is simply another case of a long look ahead. With Powell declining at a rapid rate—it lost 20,000 barrels on daily averages the past week—and California dropping steadily and certain to continue doing so, big purchasers are anticipating the time when the storing of oil will be ended and are hastening to fortify themselves while they can. In this, they are ignoring the fact of the nearly 400 million barrels in tankage now.

Foresight is always commendable, but in a situation like the present, hindsight is of as great value, looking at it from the standpoint of the average producer wholly dependent upon the large purchaser of crude oil. Nothing has occurred to make it advisable to start a large drilling campaign and it simply should not even be contemplated until spring. The experience of this present year is close enough at hand to show what happens when the big companies get nervous on the trigger.

Production in Oklahoma and Kansas was steady the past week at the previous week's level and field developments were without outstanding feature, except for the finding of water in the Wewoka field in a certain well that makes it look as though that field will not cover the territory it gave promise of.

The Torrance field of California continued to climb and drilling activity is increasing. It is not believed, however, that this field will offset the decline in other fields of the Los Angeles Basin.

## Financial

**(Financial News, pp. 108-110)**

OIL STOCKS took a sharp upturn last week, indicating that speculators and investors are confident the crisis has been passed in the industry. The turn in the oil list came almost three weeks after improvement was shown in the prices of other industrial shares. This delay was brought about seemingly, by the fact that numerous oil companies including some of those of the Standard group must do some new financing soon in order to carry their large crude oil inventories. Prices of oil stocks have been so low recently that oil companies have held off offering any new stocks or bonds.

Of the listed stocks, Tide Water led the advance, going up 13½ points over the week. Of the Standard oil group on the New York Curb, South Penn advanced 14¾ points and almost all of the other one or more points.

Buying of the leading Independent stocks has been done recently for western accounts, according to reports about the financial district. Interests affiliated with Prairie are said to have been in the stock market for Cosden and Phillips.

## Week's Price Changes

Nov. 20.—Ohio Oil Co. advanced Lance Creek, Wyo., crude 10 cents to 90 cents.

Nov. 20.—Midwest Refining Co. advanced Osage, Wyo., crude 10 cents to 90 cents.

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TULSA, Nov. 26.—Magnolia Petroleum Co. Nov. 20 reduced gasoline 2 cents at Fort Smith to 13 cents tank wagon, 16 cents service station.

## Tide Water Resumes Dividend Payment

NEW YORK, Nov. 26.—Directors of Tide Water Oil Co., today declared a dividend of $1, payable Dec. 31, to stockholders of record Dec. 15. The last previous dividend was one of $2 paid Dec. 30, 1921.

In the nine months ended Sept. 30, Tide Water earned $6.95 a share on the 496,784 shares of stock outstanding and at the end of that period had no bank loans but had $3,700,000 of cash and government securities.

Company's earnings position was improved by reason of having drastically written down inventories last year, benefiting this year by ability to get cheap California crude, and at the same time experiencing a 32 per cent gain in gasoline sales and 50 per cent gain in lubricating oils. Earnings in first nine months reflected only small part of highly profitable operation in the big Powell field. This will show more in last quarter of 1923 and early part of 1924.

## Marketing

**(Market News, pp. 97-111)**

FIRMER tone prevails in the southwestern gasoline markets following the action last week of Cosden & Co. in raising Navy gasoline quotations to 7 cents a gallon or more. While the spot market has not risen to the level of the Cosden quotations, 6-cent Navy gasoline has been removed from the market. Most spot goods are moving at 6½ cents.

Through the east the gasoline market remains rather weak although now and then some activity develops for a day or two. It is yet too early in the season of declining consumption to attempt to forecast whether the efforts of the Mid-Continent Independent refiners will be successful in holding up prices. But requirements this winter will be much greater than any previous winter, thanks to enclosed cars and more improved roads. These two factors may provide enough of demand to maintain prices at a reasonable level while refiners are building up their motor fuel stocks for the 1924 spring and summer seasons.

Kerosene continues fairly active but is less brisk than it was a week or two ago. Export buying was largely halted by the dip in foreign exchange rates 10 days ago and the advance at the end of last week was not sufficient to attract many buyers back to the market.

Fuel market is spotty, some fairly firm spots develop here and there but cheap steam coal and slackened industrial operations have prevented spread of use of oil enough to absorb the increased quantities made available by this year's overproduction of crude oil and gasoline.

Pennsylvania lubricating oils are more active than for many weeks. Certain grades of filtered oils are actually scarce. Light viscosity Texas lubricants also are enjoying a strong demand and prices are expected to advance once accumulated stocks are worked off.

Paraffin wax demand has been brisk and Pennsylvania white crude scale is a little higher.

MARYVILLE, MO., Nov. 22.—The Gray-Wray Oil Co., a newly formed company here, opened its first bulk station Sept. 10. During the first 30 days, it sold a carload of Texaco motor oils. The company has just completed stations at Burlington Junction and Hopkins, and plans to erect three more in Nodaway county next spring, according to B. E. Hannon, agent for The Texas Co. at Kansas City.

# Make a Slave Out of Every Dollar

AS ONE expert put it to Paul Truesdell, staff writer for National Petroleum News, "The smaller refining plants are in harder circumstances than they really need be because so many of the dollars employed around the place are not doing a full day's work."

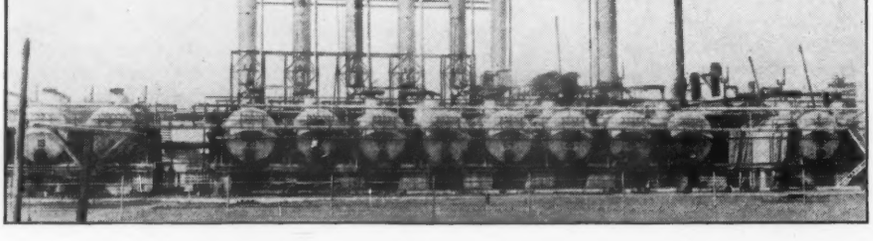
What he meant was that these plants have not secured the highest operating efficiency out of their money put into plant investment and operation. Their costs have not been cut down to the last ditch. Their heads cannot control the price they ask for their refined products; but they can make sure they are making them at the smallest possible cost.

That is one remedy for present operating conditions in the refining industry. Employ fewer dollars to do the work around the place, but make each one work like a slave.

To find out some practical ways in which that could be done National Petroleum News sent Mr. Truesdell on a tour of refining centers to study first hand what various plants were doing to cut their operating costs. He talked with the recognized refining experts of the country and visited many plants.

Out of the wealth of data he brought back he has prepared a series of eight articles, the first of which is carried in this issue. Mr. Truesdell has made a study of the refining branch of the oil business and is well qualified to take home to you the ideas and suggestions he picked up on this trip on greater operating efficiency.

*—Editor*



# Long Defined Marketing Districts Are Being Scrambled

**By J. C. Chatfield**

STAFF REPRESENT..TIVE

TULSA, Nov. 24

AN ERA of scrambling of long established and thoroughly respected marketing territories is being ushered in as a result of recent events. Further scrambling may become apparent within the next few months if current information from sources usually considered reliable is followed by action.

First comes the Prairie Oil & Gas Co. as a competitor in the refining and distributing business in the middle west. And indications are that, having once put its hand to the plow, it will not look back but will go into the game even more strenuously.

Now comes the Mutual Oil Co. with the Continental Oil Co. and probably the Sapulpa Refining Co. with control of marketing in the Rocky Mountain states and a strong competitive position in parts of territory of the Standards of Indiana and Nebraska.

When the Prairie Oil & Gas Co. assumed control of the Producers & Refiners Corp., there was an intimation that the company might see fit to build a refinery in some distributing center between the Mid-Continent and the terminus of its lines. It was learned here today that the Prairie has been giving some thought to the advisability of placing a fine modern refinery at Omaha.

### Refinery at Omaha

At present the Prairie does not have a line to Omaha. It is, however, only a matter of around 200 miles from the Prairie's present lines to that city. That is not a great distance as pipe lines go.

With a refinery at Omaha connected to its present lines the Prairie would be in an excellent position to supply the goods needed by stations of the Standard Oil Co. of Nebraska, or to compete with that company by furnishing the goods to its competitors. Its position would enable it to distribute with ease into a number of splendid consuming states such as Iowa, Illinois, Minnesota and the Dakotas as well as in Nebraska and possibly parts of Kansas.

During the present week J. S. Cosden, president of Cosden & Co. has been a visitor in Tulsa with a group of others including officials of the Taxman Refining Co., his distributing outlet.

At the same time Nelson K. Moody, president and Dana H. Kelsey, vice president and general manager of the Prairie, have been in Tulsa for the purpose of inspecting the P. & R. refinery in West Tulsa which is just across the fence from the Cosden plant.

On behalf of the Prairie, Mr. Moody promptly denied that negotiations were in progress by which it would acquire control of Cosden & Co.

On behalf of Cosden & Co. Mr. Cosden asserted there was nothing to the rumor.

Eastern telegraphic advices are that bankers of the Prairie have obtained posession of a block of shares of Cosden & Co.

In view of that fact that Cosden & Co. has no bonded indebtedness and could probably raise money without great difficulty in case of need it is considered probable by many here that any negotiatons which may be in process cannot be carried to a successful conclusion. They base their belief on the fact that Cosden would not be likely to sell unless he could get a good price for his properties and on the supposition that the Standard companies are not noted for their generosity in offering fancy prices for going concerns.

There is a theory advanced in current gossip that the Prairie and Cosden & Co. may be rather closely allied in the future following the visits of heads of both corporations in Tulsa. These theorists profess to believe that the Prairies is about to advance to Cosden & Co. certain funds for current operations.

### Cosden Increasing Activity

It may be worthy of notice that Cosden crude purchasers have been busy recently in making connections along the network of lines which the company has spread through Oklahoma fields. In addition the Cosden plant is reputed to be running around 22,000 barrels of crude per day and not rerunning any of its large benzine storage. Beginning the middle of next week it is reported that Cosden crude runs will be increased 5000 barrels to 27,000 per day. And the Cosden price on Navy gasoline is 7¼ cents to the trade whereas the general market is around 6½ cents. Jobbers having marginal contracts with Cosden are advised that they may have only as much Navy now per month as their average takings over the period when contracts were not so advantageous.

In connection with the general movement of affairs in the Middle West it should be remembered that the Roxana Petroleum Corp. is pushing a tremendous campaign of expansion. Its large refinery at Arkansas City is nearing completion. While building distributing facilities throughout the Ohio and Mississippi valleys it is preparing to have a current outlet as the stations grow in number by offering gasoline on marginal contract to Independent jobbers from one to three years.

It has been reliably reported that in many of its dealings with the Independents options to purchase have been taken so that Roxana may acquire the properties to which it furnishes gasoline by cash payments at stated times.

In the production of crude in the Mid-Continent Roxana has become a commanding figure. Through its control of the Wolverine Oil Co., half interest in Comar Oil Co. and in its own name the company produced 4,002,474 barrels of crude in the third quarter of the present year, an average of about 44,000 barrels per day. Less than three years ago, in the first quarter of 1920, Roxana's total production was only 702,000 barrels or about 7800 barrels per day.

Backed by such a large production and its two large refineries Roxana is well fortified in its campaign to push stations into all parts of the Midle West and become a formidable competitor of the Standard of Indiana, et al.

## Will Enlarge Refinery

LOS ANGELES, Nov. 23.—The O'Donnell-Gillette Refining Co. has just installed at its plant near Whittier, Cal., a kerosene canning layout with a capacity of 50,000 cases per month. It has just completed its first run of 10,000 cases.

Within the next few weeks the company plans to increase its refining capacity from 4000 to 7000 barrels per day. The stills for the extension have been ordered.

According to officials of the company, plans are being made for the construction of a lubricating oil plant, present improvement will cost about $30,000.

## Returns To Spokane

SPOKANE, WASH., Nov. 22.—J. P. Barclay has been appointed district manager of the North Pacific district of the Pure Oil Co. here. Mr. Barclay is an old resident of Spokane and returns to the city from Seattle where he has been manager of the Pacific coast branches of the Pure Oil Co. The north Pacific district comprises the states of Washington, Oregon, Idaho and western Montana.

F. A. Hall, having been connected with the Pure Oil Co. for 18 years, resigned as sales manager of the company recently to enter the real estate business at Los Angeles. Mr. Hall had been in charge of the Spokane district for 13 years. Fred J. Bettfreund is bookkeeper of the Pure Oil Co. here.

DETROIT, Nov. 26.—Emerson W. Docker, special representative for the Sinclair Refining Co., Detroit division, for the past few years, has resigned, effective Dec. 1, to take over the general management of the Guarantee Oil Corp., a new company which will operate in Michigan. The company expects to conduct extensive service station business in Detroit and vicinity, according to Mr. Docker.

# Doherty Says Oil For Heating Is Not Too Expensive

BOSTON, Nov. 22.

HENRY L. DOHERTY, head of the Cities Service interests, gave a stimulus to the movement to supplant anthracite coal with oil for heating New England homes when he addressed the newly formed New England Burner Manufacturers' Association at a dinner at the City Club here Nov. 15.

R. L. Welch, secretary and general counsel of the American Petroleum Institute was another speaker. J. P. B. Fiske, president of the burner manufacturers' association, presided.

Mr. Doherty's address was calculated to counteract the general public belief, first that oil is unduly expensive as a domestic fuel, second, that it is dangerous and third, that the supply is uncertain. He said in part:

"As a gas man, I am, of course, ambitious to substitute gas for heating in place of solid fuels, but oil for house-heating purposes threatens to make it more difficult for gas men to substitute their product. In my estimation, the most perfect condition would be for a substitution of a combination of gas and oil for solid fuels. Today, however, oil must have the right of way over gas and other substitutes.

"In Denver, Colorado, I made my first early success and it had always been my plan to try out on a commercial scale the heating of homes in Denver with gas. We started this experiment about a year ago, and now have more applications coming into our office than we can handle. It costs the home-owner in Denver the equivalent of 20 to 30 cents a gallon for oil to use gas for heating his home and he is recommending gas heating to his neighbors and others.

"The average man who says that the cost of oil as a fuel and the high cost of apparatus for heating homes are too much for him, is really cheating himself. If you ask the average home-owner what his fuel bill in a heating season is, he will mention only the dollars paid for the coal he buys and will fail to place any value on his own work of firing the furnace and removing the ashes. Neither will he give any value to the space which is released when oil is the fuel used.

"In other words, he is willing to do work for himself and not charge himself as much as his boss pays him for the work he does for his salary, and the chances are he figures that his boss underpays him.

"In my opinion the oil industry must accept the responsibility of furnishing all necessary oil for house-heating purposes, and there is no question in my mind but what the oil industry will be found ready to co-operate 100 per cent in order to permit the house-owner to heat his home with oil.

"Now the question of the future supply of oil and the price are things that seem to be bothering the average man. No one can tell where oil is to be found, but, in my opinion, there will be no scarcity that the oil companies will fail to take care of.

"I can see no reason now for a great advance in the price of fuel oil. Density of demand will be a factor, of course. The production of 2,250,000 barrels of crude oil per day is apparently at its crest, but I do not believe that there will be any great advance in price in oil for house-heating purposes, as too great an advance will immediately be followed by the gas men stepping in to take the business from the oil industry.

"There have been foolish beliefs circulating among those who do not know, that oil as a house-heating fuel is dangerous. Non-volatile oils are not dangerous, and I believe that all of this feeling that oil is dangerous is due to the fact that the average person has had his experience with volatile oils. I could drop a red-hot brand into a can of non-volatile oil and there would be no fire. Non-volatile oils are those best adaptable for heating in place of solid fuels. A careful check would probably show that there have been more fires from hot cinders and coals from coal fires than from oil burning apparatus.

"I have been trying to stir up the oil industry to the potential market it has for its product in heating with oil, and I believe that you will find the oil industry co-operating 100 per cent when that co-operation is needed. One thing more—there is no question but what the oil burner must be adequately serviced."

Vice-chairman Shattuck, of the Massachusetts state legislative committee investigating fuel conditions, gave a brief talk in which he outlined the work of the committee, and stated that he had received a lot of valuable information as a result of the speeches of the evening. He said that his committee is making a thorough and intelligent survey of all substitutes for anthracite as a heating fuel.

R. L. Welch, secretary of the American Petroleum Institute, spoke to the diners at some length and in some detail on the question of an adequate supply of oil. He stated that our present day methods are not the haphazard methods of the industry in the days of its infancy, a little more than a decade ago, and that today all exploration and development work by the industry is predicated upon the reports submitted by trained geologists who have proven that surface indications as analyzed by them have really indicated the probable presence of oil or oil sands underneath those indications. What the potential discoveries may be he indicated by saying: "The maps are as spotted with geological indications for oil as is the face of the red-headed bad boy with freckles."

## Seek Higher Rate On Natural Gasoline

By Special Correspondent

WASHINGTON, Nov. 26.—A proposition to remove natural-gas gasoline from the freight rate benefit derived from inclusion in the petroleum and its products list, has been made to the Interstate Commerce Commission by the director-general of railroads.

He has made it in an argument against refund by him of about $362 collected from the Atlantic Refining Co. for the transportation of 24 tank loads of natural-gas gasoline from Porter's Falls, W. Va., to Point Breeze, Philadelphia, in the winter of 1919 and 1920. The director-general collected a rate of 29 cents per 100 pounds while the commodity rate on gasoline from points all around Porter's Falls to Philadelphia was only 26 cents.

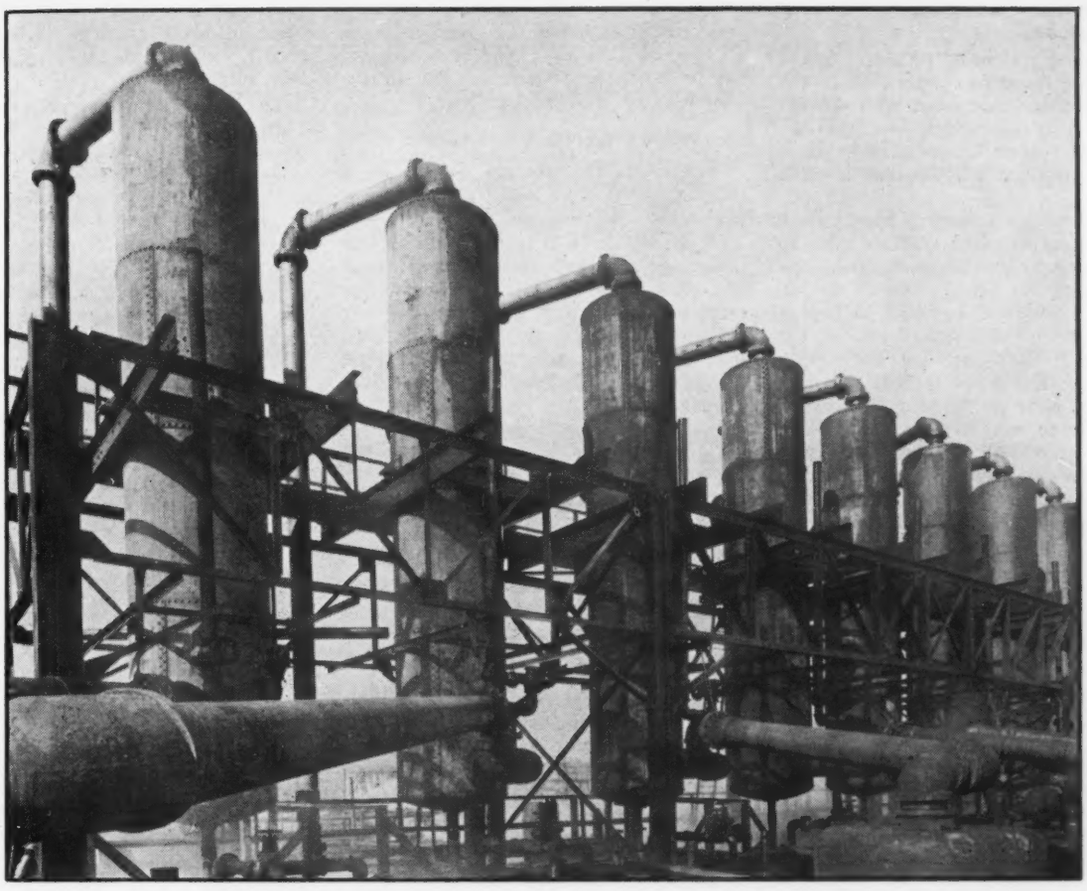
An examiner for the Interstate Commerce Commission reported in favor of compelling the director-general to refund the 3 cents per 100 pounds. In answer to that recommendation, the director-general told the freight rate body that natural-gas gasoline was not a product of petroleum distillation and that only by analogy could it be given even the 29-cent class rate. The analogy rule does not apply to commodity rates.

In asking the commission to reject the examiner's report and hold that natural-gas gasoline should pay the higher petroleum products class rate basis, the director-general, speaking through Thomas M. Woodward, one of his attorneys, repeated the arguments about gasoline hazard to show that the two kinds of gasoline mentioned should be subjected to the higher charges.

Fayette B. Dow, speaking for the American Petroleum Institute called attention to the fact that the commission in earlier cases has said that casing-head and natural-gas gasoline were gasoline. He said that if the commission reversed its decision on that point the shippers of such gasoline would surely claim a revision of the estimated weight thereon.

## Francis Out Of P & R

CHICAGO, Nov. 21.—Dr. C. K. Francis, for several years chief chemist at the plant of Cosden & Co., Tulsa, and for the past year or so vice president in charge of refining of the Producers & Refiners Corp., with headquarters here has severed his connection with the Producers & Refiners. He has made no announcement of his plans for the future.



A battery of fractionating towers at Sapulpa Refining Co's plant.

# Making The Refinery Show A Profit By Reducing Operating Costs


**By Paul Truesdell**

STAFF REPRESENTATIVE


## Article 1

## Introductory—Reclaiming Still Gases

TULSA, Nov. 21

BENJAMIN FRANKLIN, America's first wise-cracker, didn't know anything about the oil business but he said a mouthful that applies to that business as well as to everything else when he got rid of the famous maxim, "A penny saved is a penny earned."

In other words, if you can't earn more, spend less.

Everybody knows, of course, that there are two ways for a manufacturer to make a profit. One is to set a price for his product that will cover the cost of raw material, of manufacturing, of the thousand and one items that are lumped under the hard name overhead, and all other expenses that can be figured, and still leave a margin over. This margin is the profit. When the supply of the product available is a little less than the demand for it, it is easy to set this kind of a price and make a profit, which condition is known as a seller's market. But when the shoe is on the other foot, when there is a little—or a lot—more of the product available than the market can absorb—oh, boy. Then it is a buyer's market and the buyer forces the price down until there isn't any margin left. Maybe it isn't possible even to sell the product for enough to pay the operating expenses.

When the seller's market prevails, and the manufacturer is making a good profit by setting the price of his commodity high enough to allow himself a margin, he doesn't usually feel like paying much attention to the second way of making a profit which is—

**Reducing Operating Costs**

To reduce the cost of raw material if possible, which is usually not in his power to do, but most of all to reduce every element possible of his manufacturing and selling cost and overhead, which it usually is within his power to do if he applies himself earnestly and whole-heartedly to the job.


### Acknowledgment

AMONG refinery Experts to whom the readers of **National Petroleum News** are indebted for information incorporated in this series are:

Dr. C. K. Francis, M. H. Tuttle, Producers & Refiners Corp., Chicago; Carl A. Wendt, consulting engineer, Tulsa; H. L. Deming, Lincoln Oil Refining Co., Robinson, Ill.; George C. Armstrong, Indian Refining Co., Lawrenceville, Ill., Walter Miller, Marland Refining Co., Ponca City, Okla.; Dr. Roy Cross, Kansas City Testing Laboratories, Kansas City; W. G. Damon, Stellar Refining Co., Newark; F. B. Koontz, Cosden & Co., Tulsa.

The refiner now is having to revise his ideas on profits.

It is letting you in on no secret to say that if ever there was a time when the American refiner was faced with the absolute necessity of making his profit by reducing his operating costs, if he is to make any profit at all, the time is right now.

The knell of the skimming plant refiner has been rung so often that no hand of ours is going to be laid on the bell rope to ring it again. It is difficult to see right now, however, how the skimming plant refiner or any other refiner for that matter, can reduce his costs sufficiently to make a profit to brag about.

However, it is certain that the refiner who is able to run at all under present conditions, can reduce his losses and come nearer to making a profit if he takes the means at hand to eliminate as far as possible the leaks that may be occurring in his refinery operations.

And it looks to many refiners as though it is going to be a lean season for a long time to come. If that is true, any profits that are to be made will have to come from reduced costs rather than increased prices.

### Lower Costs—Higher Prices

But the thing is as broad as it is long. If you can cut a quarter or a half cent a gallon from the cost of manufacturing your product you are in the same position in regard to your profit and loss statement that you would be in if the price you get for the product had been advanced a quarter or half a cent. And you are that much better off when the advance of the quarter or half cent in the market does come.

It may be that there are in the Independent industry some plants that are 100 per cent efficient. The operator of such a plant, if any, need read no further, for this story is not talking to him.

Everybody knows the classic example of efficiency that is always trotted forward as a model, the fact that the big meat packers get a useful product out of every part of the pig they butcher except his squeal and the curl in his tail.

At least one of the big refining companies has scored one on the packers. It has carried efficiency in the refining art so far that the very lightest fractions of the oil that nobody before has considered capable of being condensed and tamed and handled, are now being converted into the lighter alcohols (Not light wine and beer.) Through these efficiency methods it is said that even the smell of gasoline has been banished from the refinery yard.

### Not Very Helpful

But this has a merely passing interest for the average refiner trying to make a lifting by the manufacture of gasoline, kerosene, lubricating oil and the other products. It does not help him any. He can no more afford to put in the extensive and expensive equipment needed to transform the smell of gasoline into isopropyl alcohol than the country butcher or the small scale packer can afford to establish plants to manufacture washing powder, leather, glue, gelatin, buttons and mattresses from the byproducts of the pig he cuts up. And it would not pay to carry the matter so far on the quantities of stuff he handles.

### Can't Afford Big Expense

Neither is the average refiner in a financial position to install any expensive equipment to increase his efficiency. Everybody knows that by a lot of redesigning and reconstruction work, most any plant could be put in shape to operate more efficiently, but right now few refiners can dig up the money for such improvements, much as they might bring up the efficiency curve of their plants.

Urging any such thing upon the refiner at the present time is a good deal like the argument you have often heard addressed to the Ford buyer. This is that if he bought a Pierce-Arrow instead of a Ford he would be money ahead in the long run because the Pierce-Arrow will last forever with small repair and replacement charges, whereas with a Ford he will have to buy a number of new cars in order to have efficient operation, will have to have the car in the shop a good deal of the time and his expense in repair bills will be heavy And then, a Pierce-Arrow is always a Pierce-Arrow and so forth.

You may have noticed that such an argument doesn't register very big with the Ford buyer. Maybe so, he says, but in the first place he hasn't the money to buy a Pierce-Arrow and in the second place he doesn't believe it. He will take his chance with the Ford, he will put in his Saturday afternoons and Sundays doctoring it and greasing it and oiling it and shining it up.

And by heck, he'll get surprisingly high efficiency out of it too, if he does that.

> The second article in this series, to appear in the next issue, will take up the question of fuel saving methods, methods of testing coal, means of determining whether the fuel is being burned efficiently; location and stopping of air leaks in still and boiler settings; use of inexpensive superheaters to increase the efficiency of the steam plant and necessity of keeping track of the carbon dioxide content of flue gases and temperature of the stack gases if efficient operation is to be assured.

### Surprising Savings Possible

So with the refiner. It simmers down right now to a matter of getting the utmost in results out of the equipment already at hand or that can be bought at relatively small expense. And the refiner who does that can obtain improvement in his operating efficiency—which means cutting his refining costs—that will surprise him.

The cracking process has played the Independent refiner rather a funny trick. A couple of years ago when the consumption of gasoline was steadily going up and the sources of crude supply seemed pretty well defined, it looked as if the sky was the limit in the demand for motor fuel. It appeared that the refiner who could make the most gasoline out of his crude was going to be the lucky refiner. The cracking process was the answer to that.

It also dawned upon the refiners generally about that time that maybe they weren't in so much danger as appeared of having to fight infringement suits, and they began to install cracking plants.

Right now the cracking plant is a liability for most refiners because the more gasoline you make on the present market, the sooner you go broke. It is a safe bet that most of the cracking plants are shut down, except those owned by refiners that have to supply gasoline to their own filling stations.

### Condition Temporary

Of course, that condition is only temporary. The refinery without a cracking plant cannot possibly survive in the future, when the market turns. This is with exceptions in mind of plants in particularly favorable locations geographically, particularly advantageous and steady market for their gas oil or surrounded by circumstances peculiar to such individual plants alone.

But the chances are that the mere fact of using a cracking plant to convey a percentage of his gas oil and fuel oil and kerosene distillate into gasoline, even when the market improves, is not going to give the average refiner much of a chance to make a profit on his operations. He has got to stop every leak he possibly can.

With the object of getting the information to pass on to the refining industry in general, a number of skilled and successful refiners have been interviewed to find out what phases of refinery operation offer the greatest opportunities for saving by measures which could be adopted without a heavy outlay of money.

These refiners pretty much agree that five major phases of refining as practiced at the majority of plants, are susceptible of corrective measures that will show the largest elimination of loss and the biggest reduction in costs. These five are:

### Five Principal Phases

1. Economizing in the use of fuel through stopping air leaks in still and boiler settings, analysing and testing the fuel used where it is coal, observing the ash content of coal used, keeping close tab on flue gases and stack temperatures as indicated whether cumbustion is efficient or not, and use of superheaters wherever practicable and not too expensive.

2. By the use of more efficient dephlegmating and fractionating towers

to conserve fuel by avoiding or reducing to the minimum the re-running of products by getting a better sepration on the first run.

3. By centralizing temperature and other control of the plant under the responsibility of one man and making it easy for him to handle the job.

4. By better condenser construction practice, better methods in the reclaiming of acid sludge, and treating of products.

5. By the installation of compression-absorption plants for reclaiming the gasoline from uncondensed still gases that in many refineries now blow to waste in the air. This item should be listed up near the head of the column of possible savings.

It is not to be thought that improving efficiency in one or all of the above mentioned phases will result in transforming a losing refinery immediately into a profitable one. It is significant, however, that there are a number of consulting refinery engineers around the country who are broadcasting letters from time to time to refiners offering to make a survey of their plants at a fee of $50 to $100 a day, and guaranteeing as a result to effect a saving of as much as 25 per cent in the operating costs of the refinery.

### Bet Fee On Success

This without ever seeing the plant they are talking about. And they bet their fee against their ability to make good on their guarantee. So it looks as if there are some important chances to make savings. It is the purpose of this series of articles, which has been written after consultation with the refinery experts before mentioned, to point out some of the possibilities of savings as outlined so that the operating head of the refinery can put them into effect himself without paying the high fee demanded by the consulting experts, and which their services are well worth.

Any gasoline reclaiming plant to handle still gases requires a compressor and the efficiency of a compression plant in gasoline recovery is greatly increased by the addition of an absorber. The absorption process will take out of the gas a percentage of gasoline that cannot be touched by the compression method.

Because the expense of operating a natural gasoline plant of the absorption type is higher than operating a simple compression plant, the idea is held by many refiners that the cost of operating an absorption tail gas plant in a refinery is excessively high. This is not true, however. The higher cost at a casinghead plant is due to the fact that the natural gasoline manufacturer has to install a steam still exclusively for re-running the absorption oil to recover the gasoline and he has to buy his absorbing oil.

The refiner, on the other hand, can use the tank for his absorber and the steam still equipment already a part of his plant for the re-running. If the refiner is making a naptha all he has to do, the gravity of the gasoline produced by his compression plant being known, is to run into a tank the amount of naptha necesary to make the blend he desires when the tank is full, and then pump the gases through the naptha as it comes from the compressor. Then he can ship the stuff direct from the tank as an absorption blend and can usually get a good price for it.

### Re-running Cost Saved

If the plant is not making naptha, any distillate that must be re-run can be used as an absorbing medium and the gasoline recovered without a special distilling operation when the stuff is re-run in the normal course of the refinery schedule.

And the dry gas, after it has been stripped of gasoline, has a high fuel value. Blown at high pressure to the burners under stills and boilers, it alone will usually pay for the entire reclaiming installation in a few months, in fuel oil saved. A later article will give actual figures showing saving in atomizing oil in the burners with high pressure gas instead of steam.

In this connection, an interesting method of saving the gasoline from the refinery gas was related to the writer by a refiner who used it in a small plant operating on Kentucky crude. There was no money for an expensive installation but the refiner knew that he was suffering a loss through the escape of gasoline in the tail gases.

So he rigged up a home made reclaiming plant with a few pieces of pipe and two tanks. The only thing he had to buy was a pump. He put a header over the lookboxes with gas lines leading into it from the rundown lines. He hooked up the header with a pump and kept just enough vacuum on the header to keep the gases coming through.

One of the tanks was filled with caustic soda solution and the other was partly filled with heavy naptha. The gas was pumped from the header through the tank of soda to remove sulphur, a treatment necessary for all gasoline kerosene made from the crude he was running, and then pumped into the tank of naptha. The naptha absorbed the gasoline contained in the gas, making the blend and avoiding the necessity of re-running which is necessary when the absorbing medium is gas oil or mineral seal. The denuded gas was then blown to the burners under the stills for fuel.

The gravity of the gasoline extracted from the gas being known, the proper proportion of naptha was placed in the tank so that when full the tank's contents would be a 78 gravity absorption blend for which there was at that time a ready market at 20 cents a gallon.

### Shipped Four Tanks

Every so often when the tank was full the contents was loaded into a tank car and shipped without any further treatment. The product, the refiner said, stood the doctor and other tests for sulphur successfully, and he never had any complaints from it. A chloride of lime solution also could be used for the removal of sulphur.

There is doubt in the minds of some refiners that a mere washing with caustic would remove all the sulphur compounds from some of the crudes. However in a plant operating on a crude the products of which did not need to be treated for sulphur, the caustic soda tank could be eliminated and merely the header, pump and naptha blending tank be used.

The refiner who used it said the whole installation cost less than $3,000 and that it paid for itself every two months. The recovery was about 300 gallons of gasoline a day (1,000 barrels of crude a day was being run). He says that on a run of 1,000 barrels a day in any plant such an installation could be depended upon to produce from 250 to 400 gallons of gasoline a day, depending on the crude and the efficiencies in other parts of the plant.

## To Try More Promoters

FORT WORTH, Nov. 26.—With Dr. Frederick A. Cook, S. E. J. Cox, and a round dozen of their associates in the promotion of the Petroleum Producers Association, added last week to the list of local blue sky oil stock sellers under penitentiary sentences, the government this week was prepared to call 30 more promoters to account.

These are under indictment in the Revere Oil Co. case, set for hearing in federal court here Dec. 10. Many pleas of guilty already have been arranged for, it was learned from attorneys. The Revere Co., like Dr. Cook's enterprise, was a "merger" concern. Cook, incidentally, is one of the defendants because of alleged fraud in the "merging" of his Texas Eagle Oil & Refining Co. with the Revere Co., about two years ago.

Cook's lawyers say he will appeal from the 14-year penitentiary sentence imposed on him by Judge M. Killits last week, following conviction of the bogus pole discoverer along with Cox, who got eight years, and various subordinates. Sentences of the latter ranged from a year and a day to eight years. Seven defendants who pleaded guilty were let off with fines. The 14 convicted are repining in the county jail.

Suit for a receivership for whatever properties the Petroleum Producers Association has, is expected within a short time.

Seventeen convictions in all and 25 pleas of guilty in oil stock fraud cases here since last May have netted promoters prison terms totaling 81 years and fines totaling $176,000.

# Oklahoma "Free Oil" Less Than Independent Refining Capacity

By A. F. Hinton
STAFF REPRESENTATIVE

TULSA, Nov. 24.

MUCH is said and written about production of oil as it rises and falls with the vagaries of the crude market, but usually, when the subject is discussed, one of its most interesting features is not mentioned at all. Granted that Oklahoma's production was so much last week and another amount this week, the real question is—how much of this production is "free oil" and how much of it is owned or controlled by companies owning their own refineries?

Supposing all the refineries in the state were running at their full capacity, what chance would those refiners with no production of their own have of securing their requirements? What proportion of the state's total production is available for these refiners, and how much of it flows automatically into other channels? The purpose of this article is to answer these questions as accurately as possible from the information available.

It will be shown that only about one-third of Oklahoma's production can be placed under the head of free oil, even under the most liberal interpretation of that term. For the purpose of this analysis, all oil not produced or controlled by the "Standard group" or by companies with refineries, is classified as free oil, although of course a large part even of that subdivision is really not "free" at all. Much of it is tied up by contracts, part ownerships, or otherwise to the larger companies. It would be impractible to attempt to segregate all these subdivisions of ownerships, so we will call it all free oil for the sake of argument.

### Tax Records Basis

Obtaining reliable data on individual companies' production is, of course, the first consideration in making an analysis of this sort, and it is probably as well to state at the outset that such data are extremely hard to get. All producers in Oklahoma are required to pay a gross production tax, and to make returns of their production to the office of the secretary of state in Oklahoma City. The lists made up in the secretary's office, giving the names of producers and amounts of their production, are probably the best source of information on this subject, and will be used as the basis of this article. It is known, however, that this list contains many duplications.

Companies owning part interest in production may report the total, although paying taxes only on their own shares. An executive of one of the biggest producing companies in the state informed the writer that his company had paid taxes on not more than half the amount of oil credited to it in the list, the other half having been other interests, and probably included in their returns. However, no better source of information is at hand, and the figures will be used in the hope that the "overs" may balance the "shorts".

### Big Gains Over 1920

Going back three and one half years we find that in the first quarter of 1920, Oklahoma produced 18,183,219 barrels, an average of 199,805 barrels daily for the 91-day period. During the third quarter of 1923, the state's output was 40,276,693 barrels, or 437,790 barrels a day. Thus, although Oklahoma's production was something like four million barrels less during the last quarter than it was during the quarter preceding it, it was still greater by 121.50 per cent than it was in the early part of 1920.

We will take out first from these figures the so-called "Standard group", consisting of companies owned by one or the other of the Standard companies or generally credited with coming under the Standard Classification. In the 1920 period under review, it appears that 3,022,034 barrels, or 16.62 per cent of the total, was produced by this group. It is interesting to note that this percentage has been only slightly increased during the intervening period. During the third quarter of 1923, the Standard companies, augmented by a few recruits who were not among those present in 1920, produced 6,754,958 barrels, or 16.79 per cent of the total. Their production had increased 123.82 per cent as compared with 121.50 per cent increase for the state as a whole.

The standard group lines up as follows, for the two periods under review:

| | 3rd Quarter 1920 | | 3rd Quarter 1923 | | |
|---|---|---|---|---|---|
| | Prod'n | % of Total | Prod'n | % of Total | % of Increase |
| Standard Group | 3,022,034 | 16.62 | 6,763,978 | 16.80 | 123.82 |
| Independent Refiners | 7,014,846 | 38.58 | 19,892,592 | 49.39 | 183.58 |
| Free Oil | 8,146,339 | 44.80 | 13,620,123 | 33.81 | 67.20 |
| Total | 18,183,219 | 100.00 | 40,276,693 | 100.00 | 121.50 |

It will be noted that Producers & Refiners Corp. is listed under 1923, as that company recently became a subsidiary of the Prairie Oil & Gas Co., although this had not been announced until after the close of the third quarter. Its production for 1920 is not here included as it was operating independently then. Mid-Kansas Oil & Gas Co. (Ohio Oil Co. subsidiary) which entered Oklahoma through its purchase of the Waite Phillips Co. properties some time ago, was not operating in Oklahoma in 1920. Dixie Oil Co., subsidiary of the Standard of Indiana, which now has production of about 9,000 barrels a day in Oklahoma, is not included in the list because of the fact it did not acquire its production until the latter part of October, and was not a producer during the quarter under analysis.

Outside of the Standard companies, the 1920 list contained names of 25 of the larger Independent refiners; i. e., producers who were also refiners. Their combined production at that time was 7,014,846 barrels for the quarter, or 38.58 per cent of the total. By the third quarter of 1923, this list had grown to 30 names, and its production totaled 19,892,592 barrels, which was 49.39 per cent of the state's total output.

This great increase in production was due largely to the almost phenomenal growth of Gypsy Oil Co., Roxana Petroleum Corp., Skelly Oil Co., and the Marland companies, each of which was credited with production of more than 3 million barrels during the quarter. Thus it will be seen that production of Independent refiners increased 229.29 per cent as compared with the states increase of 121.36 per cent in the three and a half years, while their proportion of the total jumped from 38.58 to 57.39 per cent. Phillips Petroleum Co., which is one of the state's largest producers also increased its production enormously during the period, but this company has no refinery, and its production must be listed under the free oil classification.

### Percentage Free Oil Shrinks

Assuming that all remaining production in the state constitutes free oil, i. e. oil which is accessible to all purchasers, we find that during the first three months of 1920, this amounted to 8,146,339 barrels, or 44.80 per cent of the total. In the third quarter of 1923, this free oil totaled 13,620,123 barrels, but comprised only 33.81 per cent of the total. In other words, where there were 89,513 barrels of free oil available daily in 1920, there was only 148,045 barrels daily available in 1923, in spite of the fact that the daily average of the state as a whole increased from 199,805 to 437,498 barrels during the same period.

Expressed in tabular form, the figures already given appear later in the article on page 30.

Using the figure shown to represent oil produced by companies or indi-

(Included on page 30)

# THE EDITORS' VIEWPOINT

## Selecting Institute Directors

FOLLOWING the same line of thought which last week prompted publishing of the American Petroleum Institute by-laws pertaining to election of directors, **National Petroleum News** urges the institute membership generally, before the dates of the institute meeting at St. Louis, to give the matter of its choice for institue directors serious consideration.

The method prescribed for the nomination of directors, through the board of councillors, was adopted to give sufficient time for the drafting of a slate of new directors that would give proper representation to various branches and geographical districts of the industry. Open nomination from the floor might be a more popular method of election, but it could hardly give the balance to the board of directors secured by nominations through the board of councillors.

All that is necessary under the method now laid down for the membership to take a full part in the nomination of new directors is for it as individuals or groups to present its choice for directors to the councillors before the St. Louis meeting. There are some 500 councillors and they serve principally to provide greater contact between the membership at large and the directing force of the institute. Those councillors are not going to disregard any indications from the membership generally as to its choice for directors.

The board of councillors meets as a nominating committee the first day of the annual convention, so there is little chance for the membership at large to discuss the matter at the convention and submit its recommendations to the board. If the membership generally is apathetic to presenting its choice for nominations to the board, however, it makes it easy for any possible candidate, or the candidate of only a few members or almost even a single member to bring himself before the board of councillors by a small amount of electioneering. This happened in one instance at the meeting a year ago, and resulted in the election of one director.

As pointed out in the discussion a week ago, there is means provided in the institute by-laws for the membership to exercise its desires for nominations for directors after the board of councillors have made up their slate. This is by nomination from the floor at the open meeting when elections are made. Here there must be 25 members entitled to vote concurring in such nomination. Here is an opportunity for the membership at large to submit its thought for nominations as it may develop during the progress of the annual meeting.

As regards possible candidates for directors themselves, **National Petroleum News** advances the thought that the head of the leading jobbers' association should be made an institute director. The distribution or marketing branch of the industry has less numerical representation on the directorate than either the producing or refining branches. Yet it is in this branch that the biggest portion of the Independent oil business functions. Further this Independent jobbing business is strongest in middle western territory.

Three institute directors are provided for this central states territory. One should naturally be a Standard Oil representative. That leaves two directors to represent the main bulk of the Independent jobbing business. Were one of these two to be the head of the principal jobber association, we believe the Independents would be assured of more active representation, even though numerically they might perhaps be entitled to a larger proportion in the directorate.

But the most important thing is for the institute membership as a whole to take a hand in the nomination of directors this year, by submitting their candidates to the councillors before the meeting; and on the floor, as provided, if they are of the opinion the slate as drawn by the board of councillors needs amendment—V. B. G.

## Biggest News Of The Day

THE front page of the newspaper this morning, the 22nd, was much more interesting reading than usual. The top-head stories told what the allies propose for the moment towards Germany, latest details about a murder case down the state, how the police say they are going to keep down crime this winter in the city, interesting bits from a letter in a New York divorce case, and what the preceding day's contributions were to the Community Fund.

But it wasn't here I found the story that caused my coffee to get stone cold on the table before me, before I got around to drink it.

In an insignificant position, as front page stories go, was told the finding guilty and sentencing to the federal penitentiary of Dr. Frederick A. Cook, S. E. J. Cox, and fourteen or fifteen of their associates, for promoting oil stock fraud by mail. To me that was by far the biggest thing in the day's news.

That story was only of lesser importance in the grist to the news editor of that paper, or he would have built his streamer line across the top of his page on that. But there's no doubt it was the biggest event of the day—yes, probably of the year—to the corps of federal investigators and prosecutors and those connected with the Vigilance Committee of the Associated Advertising Clubs of the World, all of whom spent many months and untold effort in the working up and prosecution of the cases in the Fort Worth court.

Again that same story was probably the most talked of news of the day in stock promotion circles in California, where another gang of operators, most of them questionable to say the least, have been beguiling the public since the new California fields came into so much general attention. Profiting by the attention given in north Texas, the California promoters have been a little more careful about how they used the mails, but nevertheless they are treading on pretty thin ice, just how thin they realize since the Fort Worth convictions. Operators of purely promotion propositions, oil and otherwise, and their slick salesmen are likely to remember that story for a considerable time also.

Then again, we wonder if that same story wasn't quite the biggest thing in the day's news to thousands of investors, probably in this state alone, in these and other fraudulent oil stock promotions, who might have carried around in their hearts a faint hope that their investments, made on the strength of rosy promises of glib salesmen, might still pan out; but who now must realize their money was just as much stolen as though taken by hi-jackers at the point of a gun.—V. B. G.

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Why can't the League to Enforce Peace do something with this matter of the sale of saxophones on instalment terms?

If Oklahoma's Jack Walton had not threatened to go on an extended lecture tour the state might have let him off easier.

# Texas Jobbers And Refiners Organize In Enthusiastic Meeting

**By J. C. Chatfield**
STAFF REPRESENTATIVE

FORT WORTH, Nov. 22

ORGANIZATION of an association of Texas refiners, jobbers and marketers was completed here today with a membership of more than 50 individuals and companies at the close of an enthusiastic two-day session. The association is to be known as the Texas Independent Oil Men's Association. It will be affiliated with the National Petroleum Marketers Association.

D. E. Little, secretary of the Litwood Oil & Supply Co., a Fort Worth jobbing company, was elected as president. W. E. Campbell, sales manager of the Panhandle Refining Co., Wichita Falls, was named first vice president; R. N. Mullin, president of the Calumet Oil Co., El Paso, second vice-president; and W. M. Harrison, president of the Star Refining & Producing Co., Fort Worth, secretary and treasurer. A paid manager is to be selected by the president to carry on work of the association.

Nine men compose the board of directors five of whom are jobbers, three refiners and one marketer. The following will serve for three years, W. R. Smith, president of the Oriental Oil Co., Dallas, Mr. Little and Mr. Harrison; for two years Weston Atwood, DeLeon Pipe Line & Refining Co., De Leon, and Mr. Campbell; for one year J. K. Helmar, Radio Petroleum Co., Fort Worth, E. J. Linderman, Ranger Oil Co., Houston, and C. A. Slimp, Slimp Oil Co., San Antonio.

In order that the organization may be kept compact so that its officers may be empowered to act quickly in emergencies an executive committee of three was selected to act between meetings of the board of directors. Members of the executive committee are: Mr. Little, Mr. Smith and Mr. Helmar.

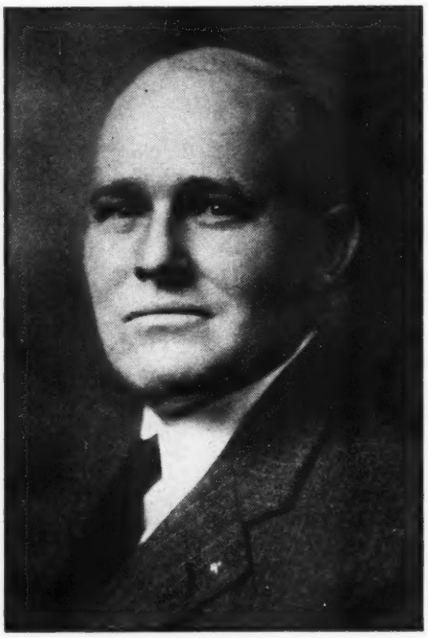
### Pay in Advance

In order that the association may be in a strong financial position it was voted to have dues paid a year in advance. A majority of those in attendance signed checks for their first year's dues as soon as the organization was completed.

With price wars in progress in several parts of the state, Texas jobbers have their backs to the wall and are fighting for their very existence. A number have fallen by the wayside during the present motoring season when as a whole the distributing division of the industry has been the most prosperous.

Explaining the situation in San Antonio, Mr. Slimp stated that for 18 months that city has had the lowest gasoline prices in the United States. Three separate tank wagon quotations are carried by various companies, 7, 9 and 11 cents, each including the state tax of one cent.

At Dallas and Fort Worth the tank wagon is on a level with the lowest possible price obtainable on gasoline in tank car lots at the refinery. For months every gallon of gasoline has been sold



**D. E. Little, Sec'y. Litwood Oil and Supply Co.**

at a loss. In El Paso, prices have been cut radically.

### Few Independents Left

There are probably fewer Independent jobbers in Texas, the largest state in the country, than in any other state. It was the estimate of one member of the new Texas association that there are now not more than 75 Independent jobbers of consequence there. Counting jobbers doing business in only a limited way, it is estimated that the total is only a little over 100.

In Texas there are five major companies fighting for business, the Magnolia Petroleum Co., Humble Oil & Refining Co., The Texas Co., Gulf Refining Co. and Pierce Oil Corp. In the average small Texas city in place of there being four or five Independent jobbers and one large company, there will be found from three to five of the large companies and possibly one Independent jobber.

It was pointed out at the convention that in former years there have been many more Independent jobbers in the state. They have gradually droppped away under the competitive conditions. At Fort Worth and Dallas each during the current summer two of the outstanding jobbers have had to dispose of their stations.

Due to the peculiar conditions present in Texas it was believed necessary to have the organization include in its membership, refiners and carload marketers as well as jobbers. There was very little dissenting opinion in that regard as the meeting progressed and none after the organization was completed.

### Nicholas Speaks

L. V. Nicholas, president of the National Petroleum Marketers Association, was the guest of the Texans at their organization meeting. He was called into consultation a number of times as the mechanics of the organization were being perfected and gave the principal address Wednesday afternoon.

Belief of the public that Independent oil interests are not capable of strong competition with the Standard interests has been a big factor bringing about governmental investigations, regulations and other ills it was asserted by Mr. Nicholas, in his address.

Mr. Nicholas took the words of Col. Robert W. Stewart, chairman of the board of the Standard of Indiana, as recently quoted, "The thought of monopoly is repugnant to the American people," and added a postscript as follows: "Therefore it is important that we, as Independents, do that thing which will most convincingly demonstrate that there is adequate and comprehensive competition.

"We must sell not only service and personal satisfaction but we must clearly and satisfactorily prove that our competition is basic and not open to deep-seated suspicion and subconscious contempt."

Mr. Nicholas referred briefly to the present ideals toward which the national association is working as being a start in the direction of proving to the public that there is genuine competition in the oil business, that competition and the law of supply and demand is operating in setting prices for gasoline, and not solely the Standard Oil Co.

He pointed to the coupon exchange plan by which the association hopes to enable a tourist to buy a gasoline book from his home town jobber and be able to obtain Independent gasoline on it from coast to coast. He referred also to the Independent insignia which the association hopes to make more widely known than the red crown.

Scattered and unorganized as it still is, the Independent branch of the indus-

# ON SUCTION LINES
# IN DRAIN PITS
# AS TRANSFER AND TANK PUMPS

**Where the working pressure does not run above 125 lbs., it's hard to beat this—**

**12 x 10 x 18"—SEPARATE CHEST TYPE**

# TRANSIT PUMP

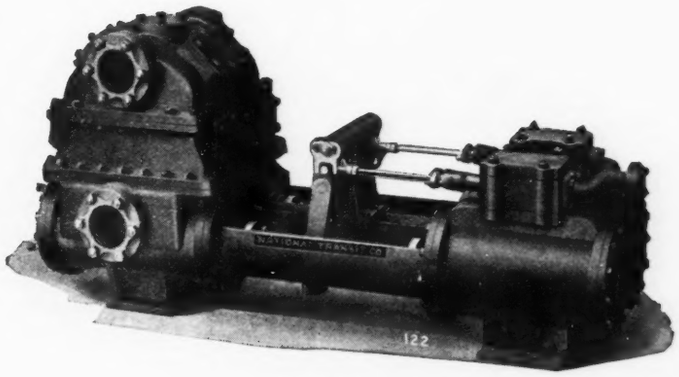



*Fig. 122*

**Many of the largest refining companies in the world have standardized on this pump wherever possible, especially where the service calls for high suction rather than high pressure.**

**We have manufactured and sold over 3700 of this one type.**

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# NATIONAL TRANSIT
## PUMP AND MACHINE COMPANY
### OIL CITY, PENNA.

**District Offices: New York, Philadelphia, Cleveland, Pittsburgh, Kansas City, Houston and Denver**

try does not appear cohesive and adequate as a competitive force to the public, Nicholas said. "It is my opinion that it is the underlying distrust of our adequacy which reacts to our disadvantage and brings in on us investigations, regulatory laws and hurtful publicity."

Mr. Nicholas followed his assertions with a plea for more thorough organizations. "Consider if you will," he urged, "the big organizations with which we compete. Is their sales skill superior to ours? Is the quality of their products superior to ours? Is their service superior?"

Answering emphatically no to each of his own questions, Mr. Nicholas asserted that the sole superiority of the Standard companies was their skill in buying organization, employing executives to direct the broad general course of the organization.

There are two kinds of oversupply, Mr. Nicholas declared in pointing a warning to the jobbers. "There is an oversupply of material such as the industry has staggered under this year, the oversupply of crude oil and gasoline which has forced prices down. But the oversupply may be one of service as well. The result will inevitably be the same."

Mr. Nicholas declared that wide margins such as have been seen this year are not profitable. They encourage too great an expansion of marketing facilities. "Gasoline pumps, for the vending of an essential, a real necessity, are becoming as numerous as gum and candy slot machines.

"Seeing this tremendous investment in equipment, the public cannot help but feel that there is a large profit tucked away somewhere. It adds to their suspicion of the industry, since they know of the big margin in selling candy and similar luxuries."

Mr. Nicholas raised the question of how soon the much talked of saturation point in automobiles and gasoline will be reached. Without making a positive assertion he ventured the opinion that the time may not be far distant when the ascending curve of consumption may flatten out.

In closing his address Mr. Nicholas warned that the time may come soon when the jobber's margin may be increasingly small. He believes that the one who has built up an organization which demands a high overhead charge will fall and that only the fittest in the distributing division will survive. It is his opinion that there are 40 per cent more stations in the United States than are needed.

# Registrations Texas Independent Oil Men's Association

| Name | Address | Company |
|---|---|---|
| Helmar, Jas. K. | Fort Worth | Radio Petroleum Co. |
| Eggleston, Geo. B. | San Antonio | Southern Refining Co. |
| Slimp, C. A. | San Antonio | Slimp Oil Co. and Pioneer Oil Refining Co. |
| Hansinger, H. E. | Orange | Gate City Oil Co. of Texas |
| Lockhart, H. L. | El Paso | Rio Grande Oil |
| Little, D. E. | Ft. Worth | Litwood Oil & Supply Co. |
| Hall, S. H. | Big Springs | Hall Oil Co |
| Poore, B. B. | Bridgeport | Bridgeport Refining Co. |
| Sutphin, M. J. | Ft. Worth | American Oil Co. |
| Willis, B. M. | Ennis | Home Industrial Oil Co. |
| Jones, Elliott | San Antonio | Elliott Jones & Co., Inc. |
| Roessner, Paul | Ft. Worth | |
| Taylor, Bayard | Cleburne | Independent Oil Co. |
| Belcher, Herman | San Angelo | Independent Oil Co. |
| Belcher, J. W. | San Angelo | Independent Oil Co. |
| Barnett, G. B. | Krum | Cole & Barnett Oil Co. |
| Casey, Floyd | Waco | Home Oil Co. |
| Morrow, C. B. | Waco | Allen-Porter Oil Co. |
| Lehr, R. P. | Ft. Worth | Litwood Oil & Supply Co. |
| Withrow, Wm. W. | Teague | Independent Oil Co. |
| Atwood, Weston | De Leon | DeLeon Pipe Line & Refining Co |
| Harrison, W. M. | Ft. Worth | Star Refining & Producing Co. |
| Adams, A. L. | Ft. Worth | Transcontinental Oil & Ref. Co. |
| Rothermel, L. F. | Houston | Deepwater Oil & Refining Co. |
| Jenkins, W. M. | Commerce | Independent Oil Co. |
| Chatfield, J. C. | Tulsa | National Petroleum News |
| Smollin, L. P. | Idalon | Idalon Oil Co. |
| Dawkins, E. B. | Fort Worth | |
| Spann, W. R. | Fort Worth | National Gasoline Co. |
| McCoy, J. C. | Fort Worth | Transcontinental Oil Co. |
| Hildebrandt, H. C. | Fort Worth | Star Refining & Producing Co. |
| Megee, R. E. | San Antonio | Paramount Petroleum Pro. Co. |
| McKeehan, H. L. | Fort Worth | Ansonian Petroleum Co. |
| Ellis, W. B. | Hillsboro | Independent Oil Co. |
| Nichols, Roe | Fort Worth | Roe Nichols Oil Co. |
| Greene, L. A. | Fort Worth | Radio Petroleum Co. |
| Nicholas, L. V. | Chicago | N. P. M. A. |
| Lindeman, E. J. | Houston | Ranger Oil Co. |
| King, H. H. | Fort Worth | The Filling Station |
| Smith, W. R. | Dallas | Oriental Oil Co. |
| Conneney, W. H. | Midlothian | W. H. Conneney Oil Co. |
| Rose, Howard M. | Fort Worth | Cities Service Oil Co. |
| Hutchens, L. E. | Fort Worth | Cities Service Oil Co. |
| Bauman, J. E. | Fort Worth | Cities Service Oil Co. |
| Alves, J. B. | Dallas | B. U. Oil Co. |
| Hassan, Jr., H. A. | Dallas | Sinclair Refining Co. |
| Watson, C. F. | San Antonio | Grayburg Oil Co. |
| Hughes, Palmer | Dallas | Clayton Oil & Refining Co. |
| Haskins, E. L. | Dallas | Public Service Stations |
| Smith, M. T. | Dallas | Oriental Oil Co. |
| Canterbury, J. F. | Fort Worth | Owenwood Oil Co. |
| Bishop, C. M. | Fort Worth | Owenwood Oil Co. |
| Mullin, R. N. | El Paso | Calumet Oil Co. |
| Miller, F. | Kansas City | Miller Petroleum Co. |
| Johnson, J. S. | Wichita Falls | American Refining Co. |
| Presson, H. A. | Ft. Worth | Hert & MacDermott, Inc. |
| Campbell, W. E. | Wichita Falls | Panhandle Refining Co. |
| Chambers, M. A. | Wichita Falls | Panhandle Refining Co. |
| Spencer, A. A. | Wichita Falls | Exchange Petroleum Co |
| Mears, Joe | Wichita Falls | |
| James, H. G. | Wichita, Kan. | Derby Oil Co. |

(Concluded from page 26)

| Company | Total Production, Barrels 1st quarter 1920 | 3rd quarter 1923 |
|---|---|---|
| Prairie Oil & Gas Co | 1,313,675 | 1,531,839 |
| Producers & Refiners | ..... | 418,036 |
| Magnolia Petroleum Co | 1,074,516 | 1,517,945 |
| Carter Oil Co | 536,300 | 2,900,918 |
| Atlantic Oil Prod. Co | 18,976 | ..... |
| Humble Oil & Refg. Co | 88,567 | 299,989 |
| Fensland Oil Co. (P.&R.) | ..... | 7,014 |
| Mid-Kansas O.& G. Co | ..... | 79,217 |
| Total Standard Group | 3,022,034 | 6,754,958 |

viduals without refineries or refinery connections, and therefore "free oil" in the sense that it is for sale to the best and highest bidder, it is apparent that only slightly more than one-third of the state's total production may be placed under that category. Slightly less than one-half of the state's production is owned directly by companies with refineries. The Standard group produces only about one-sixth of Oklahoma's total output, and has maintained almost exactly that proportion during the past three and one-half years.

There are about 71 refineries in Oklahoma which are not included in the list of those who are also producers. Their total capacity is roundly 225,550 barrels a day. Not having production of their own, they must go into the open market for crude, and it has already been shown that only 148,045 barrels a day were available as free oil during the third quarter of 1923. Of course part of this total refinery capacity is obsolete equipment that would probably never be operated under any conditions. A relatively small proportion of this refining capacity is served also with crude from north Texas and also Kansas. Production other than this is free only insofar as it is in excess of refinery facilities or storage capacity of the companies producing it. It is easily seen, therefore, why the refiner is forced to offer premiums for crude during those periods when it is in demand, when refineries are running full blast, and the big buying companies taking all the oil they can handle.

Following is a list of the principal producers in Oklahoma who either have refineries or refinery affiliations, aside from the Standard group already given:

| Company | Production, Barrels 1st quarter 1920 | 3rd quarter 1923 |
|---|---|---|
| Barnsdall Ref. Co | 111,671 | 247,031 |
| Cameron Ref. Co | ..... | 36,405 |
| Champlin Ref. Co | 41,146 | 26,430 |
| Chestnut-Smith | 1,901 | 16,063 |
| Cosden & Co | 712,948 | 603,050 |
| Empire G. & F. Co | 84,828 | 357,770 |
| Gypsy Oil Co | 566,922 | 3,973,893 |
| Illinois Ref. Co | ..... | 4,861 |
| Independent O. & G. Co | 17,084 | 152,459 |
| Indiahoma Ref. Co | 170,060 | ..... |
| Marland Companies | 332,333 | 2,468,221 |
| Meridian Pet. Co | ..... | 34,198 |
| Mid-Co Pet. Co | 1,074,516 | ..... |
| Okla. P. & R. Co | 368,633 | 314,764 |
| Phillips, Waite | 45,008 | 532,390 |
| Pierce Oil Corp | 12,365 | 4,894 |
| Prod. & Ref. Corp | 454,834 | ..... |
| Pure Oil Co | 325,600 | 475,605 |
| Roxana Pet. Co | 702,334 | 4,002,474 |
| Skelly Oil Co | 131,507 | 3,056,069 |
| Sinclair O. & G. Co | 545,635 | 1,252,105 |
| Shaffer O. & R. Co | ..... | 173,428 |
| Sapulpa Refg. Co | 23,758 | 4,375 |
| Texas Co | 629,374 | 874,982 |
| T.-P. C. & O. Co | ..... | 109,315 |
| Tidal Oil Co | 370,390 | 580,352 |
| Transcontinental | 8,720 | ..... |
| White Eagle O. & R. Co | ..... | 96,753 |
| Wilcox, H. F. O. & G. Co | 119,345 | 461,433 |
| | 7,036,697 | 19,892,592 |

In making up this table, production of subsidiary companies is included with that of controlling company. Total for Roxana was arrived at by taking one-half of Comar Oil Co. production, plus Wolverine Oil Co. plus Roxana Petroleum Corp. proper. Marland's total is made up of half of Comar, plus Alcorn, Kay County Gas Co., etc., plus

(Concluded on page 32, col. 3)

# OIL FIELD SUPPLY TRADE NEWS

## Active Demand For Pipe Is Expected In February

By Special Correspondent

PITTSBURGH, Nov. 27

THE falling off in tubular goods orders from oil producing territories is becoming more pronounced but so far it has not affected pipe mill operations. Backlogs are decreased owing to the splendid transportation facilities that have prevailed and to the high operating rate maintained for several months by the pipe producers; this continues to average in advance of 90 per cent.

Recent orders for pipe from jobbers have comprised single carloads for the most part, although occasionally one is p'aced for 100 tons or more. In the main, these are specifications on orders placed some time ago and the call upon the mills to complete such orders is fairly large. Practically no casing is being ordered at present and what line pipe business is coming through is for the purpose of completing lines in progress of installation. However, numerous orders are expected to develop in February or March, since word is being received of many projects planned for development at that time.

In the meantime, pipe producers are satisfying themselves with the piecemeal business being offered to them, since in so many directions drilling has to be kept up in order to hold leases on oil property. Prices of April 19, 1923, continue in force and no change is contemplated for this year at least.

Plates continue to be quoted at 2.50 cents, base Pittsburgh, as a general thing, despite the falling off in oil storage tank business. Once in a while a 2.40-cent, mill price, develops or some other slight concession is made where the need for business becomes pressing. In the Chicago market, both the Standard Oil Co. of Indiana and the Sinclair Oil & Gas Co., have been active in placing further tonnages with the Graver Corp., tank builder. The Standard has been buying tanks for erection in the Casper, Wyo., field and the Sinclair company for installation in the Chicago territory. An inquiry for a large plate tonnage is being circulated quietly among Chicago steel mills in an effort to develop a price lower than anything showing itself in recent months.

The Standard Oil Co. of New Jersey and the Standard Oil Co. of New York have recently been active entrants into the tin plate market. Large inquiries have been circulated and some orders have been placed. One of these companies sought tin plate for nine months' requirements for case oil and this order probably will be placed in Eng'and on price, since the duty on the tin plate in would be refunded when the oil cans are again shipped abroad. American tin plate producers quoted the full $5.50 per base box, 100 pounds, Pittsburgh. The leading producer, the American Sheet & Tin Plate Co. has enough business in hand to enable it to operate all its mills on the basis of at least 90 per cent from now until June 30, 1924. Between Nov. 1 and Nov. 7, this year, it took orders for 400,000 tons of tin plate, largely from the American Can Co. and the Continental Can Co. and other container manufacturers.

One inquiry of recent issuance which has caused considerable interest among car builders is that of the Southern Pacific railroad for 205 12,500-gallon oil tank cars. This probably will be placed this week.

### Equipment Orders

Much equipment will be needed for the $300,000 plant at Linden, N. J., to be erected shortly by the Standard Oil Co. of New Jersey, 26 Broadway, New York. James T. Stewart, Inc., is the engineer in charge.

Hoists and other equipment are being bid upon for the $300,000 warehouse being erected by the Gulf Refining Co., at Thirty-second street and Penrose avenue, Philadelphia. This structure will be five stories high and of reinforced concrete.

The contract for pumping machinery, compressors, motors and piping system for the new oil storage and distributing plant at the United States naval base, Pearl Harbor, Hawaii, for the Pan-American Petroleum & Transport Co., 120 Broadway, New York, has been let to the M. W. Kellogg Co., 90 West street, New York., for $342,000. The United States Steel Products Co., 30 Church street, New York, was awarded the contract for the superstructure, $96,000 and the contract for the insulation of storage tanks, $40,000 went to the Armstrong Cork Co., Pittsburgh.

Tentative plans for rebuilding the portion of its Cabin Creek plant near Charleston, W. Va., recently destroyed by fire at an estimated loss of $100,000, have been made by the Pure Oil Co., Pure Oil Building, Columbus, O.

Construction of the first unit of its new plant to manufacture lubricating oils will cost $45,000 with equipment, according to estimates of the Wabash Valley Refining Co., Terre Haute, Ind. It will be located on the site of the former works of the Ball Brothers Glass Co.

Some of the equipment has been bought for and construction is in progress up on the first unit of a refinery for the Transcontinental Oil Co. at Fort Worth, Tex., for the production of lubricating oils.

Installation of this machinery will start soon. A new gaso'ine plant also is being built and other extensions will be made. The company has made an appropriation of about $1,500,000 for the work.

Preliminary plans have been arranged by the Hanlon Gasoline Co., Breckinridge, Tex., operated by Chestnut & Smith, Inc., Tulsa, for a new gasoline plant with a capacity of 50,000 gallons per day. It will also make extensions in its local oil refinery and install additional machinery. The entire improvement is expected to cost in excess of $2,000,000.

With an initial output of 250 barrels per day, a new refinery is scheduled for early building in the vicinty of Devil's Den, Lost Hills section, San Francisco by the Vanderuff Petroleum Co., that city. This improvement will cost 60,000. W. S. Hillyer is superintendent.

## Supply Trade Personals

LOS ANGELES, Nov. 23.—John Pollard, former petroleum engineer for the U. S. Bureau of Mines has taken the position of general superintendent for the Star Petroleum Co. according to an anouncement just made by W. B. Allen, secretary of the company.

* * *

TULSA, Nov. 22.—M. M. Valerius, consulting geologist, and head of the M. M. Valerius Oil & Gas Co., has gone out to western Kansas to look at his company's wildcat test in Russell county. This well is reported to have had a showing of oil.

* * *

CASPER, Nov. 24.—Dr. A. C. Bayle of Laramie, geologist for the Union Pacific railroad, has been making an investigation of the oil and gas possibilities in the vicinity of Gering, Nebr.

# Department Councillors Named By National Petroleum Ass'n.

CLEVELAND, Nov. 22

APPOINTMENT of councillors for the various departments of the National Petroleum Association were made at a recent meeting of the board of trustees, according to a bulletin sent out by Judge C. D. Chamberlin, secretary and general counsel of the association.

The trustees are urged in the bulletin to get their councillors together as soon as possible and get them to work upon the problems requiring their attention. The trustees in charge of each of the departments and their newly appointed councillors follow:

**Department of Manufacture**

Lloyd R. Crawford, The Paragon Refining Co., trustee in charge.

**Councillors**

R. C. Sawyer, Sinclair Refining Co.; L. D. Fulton, Penn American Refining Co.; George C. Armstrong, Indian Refining Co. Henry Taylor, Pure Oil Co.; O. D. Robinson, Transcontinental Oil Co.

**Department of Standards and Tests**

O. P. Keeney, Tide Water Oil Co., trustee in charge.

**Councillors**

W. E. Perdew, Sinclair Refining Co.; R. M. Shanklin, Crew Levick Co.; G. J. Steigerwald, Fred G. Clark Co.; W. E. Espy, Cosden & Co.; Edwin A. McCadden, Pure Oil Co.

**Department of Traffic and Transportation**

C. L. Suhr, Penn American Refining Co., trustee in charge.

**Councillors**

C. B. Ellis, Gulf Refining Co.; J. M. O'Day, Sinclair Refining Co.; H. W. Roe, Cosden & Co.; E. E. Harrington, National Refining Co.; W. I. Nokely, Paragon Refining Co.

**Department of Trade and Commerce**

H. A. Logan, United Refining Co., trustee in charge.

**Councillors**

W. B. Bassett, Great Southern Refining Co.; G. G. Woodruff, Roxana Petroleum Co. of Oklahoma; T. H. C. Allen, Vulcan Oil Refining Co.; J. S. Cordell, Empire Refineries, Inc., W. A. McCafferty, Emery Manufacturing Co.

**Department of Economics, Accounting and Statistics**

F. B. Fretter, National Refining Co., trustee in charge.

**Councillors**

W. R. Francisco, Shaffer Oil & Refining Co.; C. J. Leroux, Paragon Refining Co.; George H. Detlor, Warren Refining Co.; M. A. Brewster, Penn American Refining Co.; L. C. Enderlin, Pure Oil Co.

**Department of Legislation and Litigation**

Sheldon Clark, Sinclair Refining Co. trustee in charge.

**Councillors**

Samuel Messer, James B. Berry's Sons Co., Inc.; J. A. Wainright, Fred G. Clark Co.; L. P. Litzinger, Butler County Oil Refining Co.; Robert C. Pew, Sun Oil Co.; M. F. Cowden, Pennsylvania Oil Products Refining Co.

**Department of Membership and Relations**

Fred G. Clark, The Fred G. Clark Co., trustee in charge.

**Councillors**

P. M. Miskell, Empire Refineries, Inc.; T. J. Hilliard, Pittsburgh Oil & Refining Co.; H. L. Deming, James B. Berry's Sons Co., Inc.; Sheldon Clark, Sinclair Refining Co.; R. A. Wotowitch, Crew Levick Co.

**Department of Welfare and Insurance**

R. A. Wotowitch, Crew Levick Co., trustee in charge.

**Councillors**

J. A. Fawcett, Crystal Oil Works; H. H. Willock, Waverly Oil Works Co.; W. H. Fehsenfeld, Red "C" Oil Co.; George P. Brockway, Seneca Oil Works; P. S. Tarbox, Independent Refining Co.

## Navy Not Heavy Buyer Of Gasoline In 1924

WASHINGTON, Nov. 19.—Acknowledgment that it will probably not be a large user of petroleum products during the first half of 1924 has been made by the navy in an advertisement sent to the oil trade asking for bids for furnishing gasoline to east coast stations. The bids are to be opened Dec. 4. The call for the deliveries of motor gasoline, at the maximum, is for small quantities, as follows:

Otter Cliff, Me., radio station, 5,000 gallons; and naval air station, Pensacola, Fla., 90,000 gallons.

For domestic aviation gasoline, the advertisement calls for maximum deliveries as follows: New York, 25,000 gallons; naval proving grounds, Dahlgren, Va., 10,000 gallons; marine flying field, Quantico, Va., 50,000 gallons; Pensacola, 250,000 gallons; navy yard, Washington, 40,000 gallons; naval station, Key West 30,000 gallons, and Guantanamo Bay, Cuba 25,000 gallons.

The news that the navy will not be a big customer is contained in an admonition that "due to uncertainty concerning the number of naval vessels to be kept in commission, the extent of their cruising activities, possibility of allocation to other forces, also possible abandonment of naval stations and restrictions in activities of air-craft, it must be understood that contracts made on this schedule will cover the quantities of motor and aviation gasoline, required for naval purposes during the period contracted for and the purchase of definite quantities is not guaranteed."

The bids are to be net for delivery such as indicated. The gasoline to be furnished is to be in strict accordance with specifications 7GLa of July 2, 1923. Prices are to be quoted where there are more than 10,000 gallons to be delivered, for deliveries in tank-cars, in tank wagons or in drums, except in the case of New York where deliveries may be made by barge, free alongside ship in the North River, and/or Gravesend bay. The navy reserves the right to accept the bids of two or more suppliers at a given point, and it is understood that when two or more bids are accepted at a particular place, the total will not be increased by reason of that fact.

## Seek More Members

ROCHESTER, N. Y., Nov. 22.—The Western New York Gasoline Dealers Association at a meeting held here Nov. 20 decided to put a paid organizer in the field to bring up the membership of the association, and appointed P. L. Lang to that position. Mr. Lang is now working in Orleans county where the association already has a large membership.

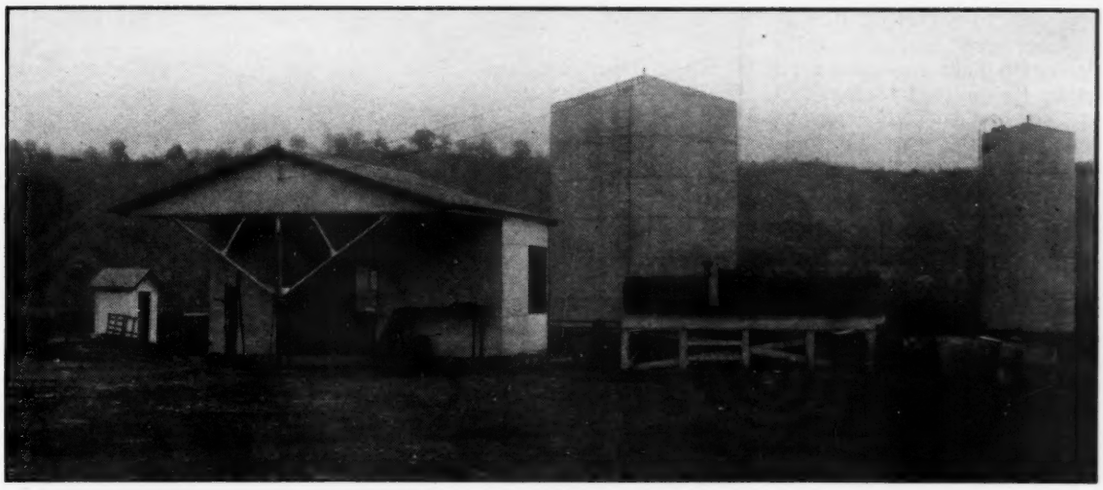
At the meeting it was agreed that the members should contribute 2 cents a gallon on gasoline sold during the week from Nov. 25 to Dec. 1 to the expenses of the organization. This is in addition to the annual $10 dues.

According to C. H. Quinn, vice president of the association, the membership went on record at the meeting in favor of a 4-cent margin which has been enjoyed by the western New York jobbers all summer. Mr. Quinn reports that since the court decision ousting curb pumps from the streets of Buffalo the number of drive-in stations there has shown a considerable increase.

TULSA, Nov. 22.—J. S. Cosden, president of Cosden & Co., arrived in Tulsa this morning from New York, and will remain until Saturday. Mr. Cosden warned producers against resumption of indiscriminate drilling, but was otherwise uncommunicative, denying himself to newspaper men.

(Concluded from page 30)

Marland Refining Co.'s own production. Pure oil Co. and O. P. & R. Co. are shown separately in both columns. Producers and Refiners Corp. is not shown in 1923 column as it is included among "Standard" companies. Texas Co. includes Midland Securities Co. Pure Oil Cos. 1920 production was under name of Ohio Cities Gas Co.



Canopies over the space where the trucks fill keep stray sparks from locomotive away

# Fitting The Bulk Station To Its Job--Standardizing On Types

By Paul Truesdell

STAFF REPRESENTATIVE

**Article 1**

CLEVELAND, Nov. 20.

THERE are lots of families, maybe you know some of them, with two daughters; one of them is pretty, accomplished, bright, attractive, sought after, dolled up and petted, while the other is plain, hard-working, good and honest but attracting little attention; in fact, rather neglected.

And yet the latter may be doing quite as useful a work in the world as her sister.

Maybe it's a good deal that way with the oil jobbing family. Two members of Old Man Marketer's business family are Filling Station and Bulk Station. Both of them are good, honest helps in the business if they are handled right.

### The Coquettish Filling Station

Filling Station is in the limelight and is a coquette. In fact, she is encouraged to be. She stands in the public eyes—as much in the public eyes as possible, blazing with lights, flashing with brilliant colored signs, glistening with paint and often decorated with flowers, she has been dolled up for the occasion. She craves society and extends a broad invitation to all and sundry to stop and buy. Sometimes she is accused of being an extravagant wench but if she is, it is all in the effort to attract admirers.

### The Plain, Neglected Sister

Bulk Station is like the plain, homely human sister in the family. Squatting down by the railroad tracks or off in the edge of town in a pasture field, or beside some city dump, she is taken for granted. No bright lights, no bright signs, often not even presentable clothes in the shape of paint; she is too often sadly neglected. And remember, please, that Bulk Station is one of the key links in the chain of distribution of gasoline and kerosene from the refinery to the consumer. The success of Filling Station depends in large measure on how Bulk Station carries on her part of the job. Besides that, Bulk Station is the final jumping off point from which a large part of the gasoline and practically 99 per cent of the kerosene sold goes directly to the consumer by tank wagon or truck. So Bulk Station is worth considerable attention, too. There are a good many jobbers whose entire business is handled in tank wagons from bulk stations; companies that have no filling stations at all.

THE accompanying is the first of a series of articles on layout, construction and operation of bulk stations, as it has been worked out by the Standard of Ohio in more than 30 years of experience, and other companies. General points considered in selecting a site and constructing a station, are treated in this article.

Later articles will take up more in detail, construction methods, costs, setting of tanks, arrangement of piping and various methods that have been developed to cut down construction and operating costs and to increase efficiency.

Also, other types of stations, adaptable for larger and smaller towns than the one described in this article, will be discussed.

The problems of location, construction and operation of bulk stations are as different as possible from those of location, construction and operation of filling stations, but they are just as important. There is perhaps more chance to cut operating costs and overhead by the proper handling of the bulk station problems than there is in filling stations.

The filling station is a retail store. It must be on a good site or it will not get the business and good locations are expensive.

### Wholesale Business

On the other hand, the bulk station is principally a warehouse. Where main considerations in filling station planning are to make it easy for the motorist to find the station, drive into it and be well served when he is in, the main points in a bulk station are ease of unloading gasoline and kerosene from tank cars and ease of reloading it in tank trucks for distribution. Last but not least, it is important to consider getting the loaded truck away from the station on to the highway. Sometimes this is lost sight of and when it is it costs the oil company

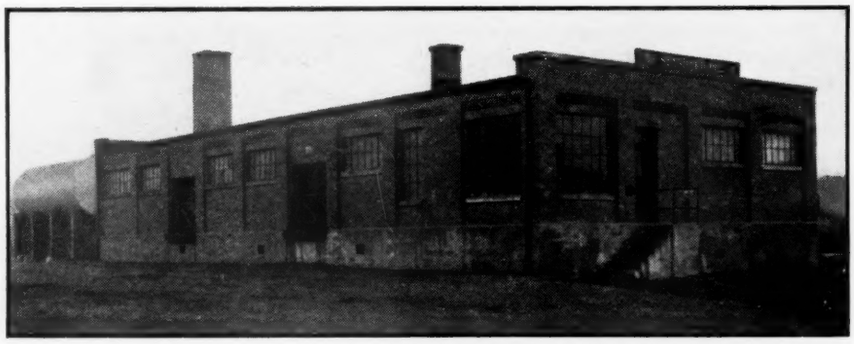
considerable money to remedy it. It is not so long ago that practically every bulk station built was placed on land leased by the railroad company to the jobber. It was an advantageous arrangement for both, since the railroad got something, usually a nominal sum, for the rental of its land and it also encouraged by that means, development of freight for its lines. The fact that a side track was essential to serve a bulk station made the arrangement altogether logical.

However there was one disadvantage to the plan. The tanks, loading racks and unloading connections were usually very close to the main track of the railroad which the railroads claimed constituted a dangerous fire hazard.

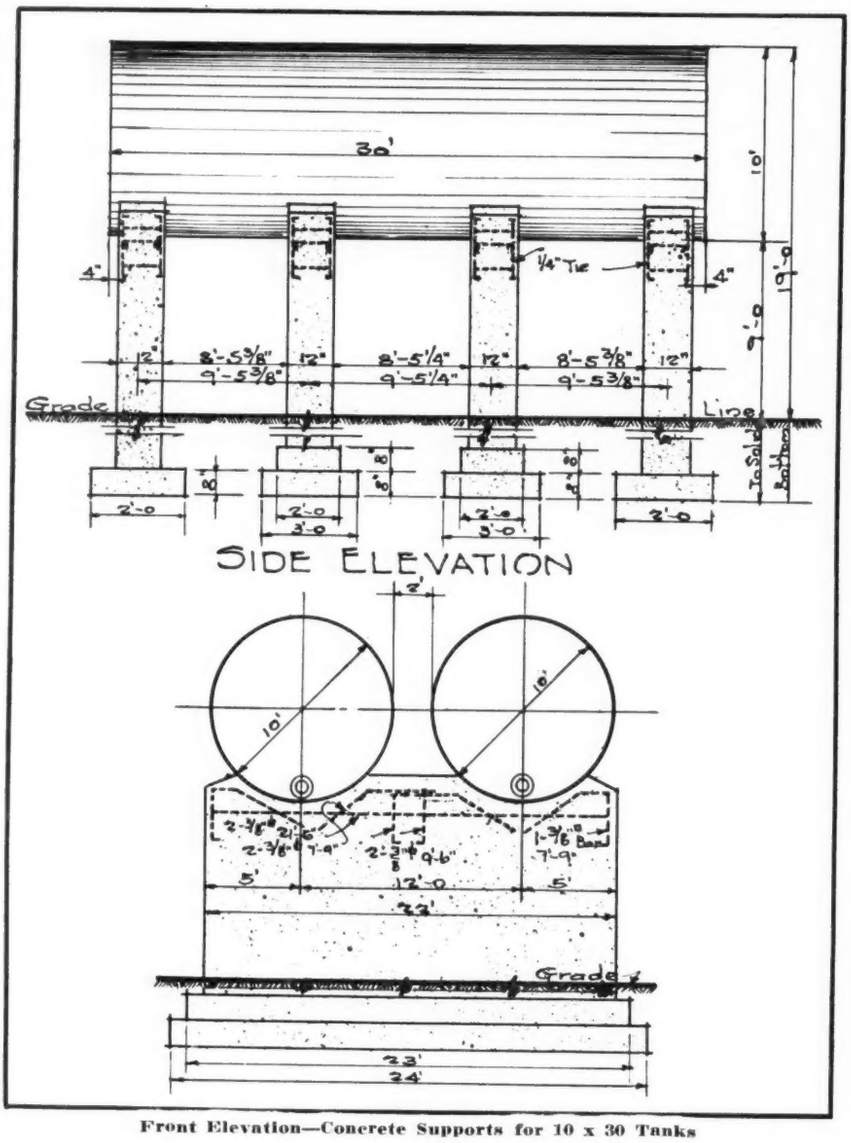
A couple of years ago Colonel B. W. Dunn, chief of the Bureau of Explosives of the American Railway Association, attacked this hazard and promulgated rules for the establishment of bulk stations that, had it been enforced with regard to existing stations, would have necessitated the removal and rebuilding of thousands of them at a prohibitive expense to the industry.

The ruling was modified upon vigorous protests of the oil industry, so that it applied only to new stations. However, the fact that the new rule prescribed a distance of 80 feet as the minimum from the main track at which unloading or loading connections could be placed, made a large part of railroad land unavailable because of its location along the main right of way.

Since the promulgation of B. C. L. 2084 by the American Railway Association (Colonel Dunn's rules) oil companies generally have been either buying or leasing for a long term, sites for their bulk stations. Outright purchase of the sites is generally preferred. In considering a site for a bulk station the following main points should be taken into account.



**Standard of Ohio at Ironton O.**




**Front Elevation—Concrete Supports for 10 x 30 Tanks**

1.—The site must be near enough to a railroad so that the laying of a switch track to the station will not involve excessive expense.

2.—It should be located on the outskirts of the town, as a rule, so as to minimize fire hazard and avert prejudice on the part of the townspeople. The direction of the probable future development of the town should also be forecast as well as possible to avoid the likelihood that the station within a few years will be closely surrounded by dwellings, warehouses or other buildings which would cause close and perhaps expensive restrictions to be enforced concerning the amount of storage allowed, the location of tanks and other safeguards designed to protect adjoining property.

### Station Should be Central

3.—While the station should be well removed from town, it should be located as nearly as possible as the hub of a wheel from which the tank wagon routes and proposed routes will radiate, in such a way as to enable the trucks to cover the entire territory, and the new territory that may be expected to develop with the growth of population and intensive sales effort, with the shortest possible hauling mileage.

4.—In a town where the company erecting the bulk station operates service stations as well, or where it proposes to establish service stations, the location or proposed location of these should be taken into account, also in choosing the bulk station site, in order to minimize the hauling. Inasmuch as it is generally estimated that the expense of operating tank trucks constitutes about 45 per cent of the total cost of operating a bulk station, the matter of keeping down hauling mileage is important.

5.—The condition of the ground with reference to soil and drainage should be considered, as well as the nearness to a paved road or a highway that is navigable for heavy trucks the year round. In a good many cases it will be necessary to build or improve a road from the main highway into the station and the shortness or length of road necessary to build is an important item in the expense of building the station.

And it is expensive to have trucks get mired driving in and out of the sta-

**Garage at Standard Ironton Stations**

tion, which is almost sure to happen at least occasionally if an attempt is made to operate on a drive-in road that is not drained and surfaced in some manner. Building a good road in the first place is less expensive than getting trucks out of the mud. So the station site should be so located that it will be necessary to build only a short road.

6.—In selecting a site, not only the present volume of business being done should be considered but an attempt should be made to estimate the growth of business for the future and a large enough location should be chosen to permit the erection of additional tanks and garage space for additional trucks and in case tank wagons are used, for their accommodation and for the stabling of additional horses.

Often times quite as much, or even more time must be consumed in selecting and acquiring a bulk storage station site, as in erecting the station itself. The first problem is to locate available sites, that is, sites that can be purchased having railroad frontage and proper dimensions to satisfy the requirements of B.C.I. 2084. Often times this is a very difficult task and requires considerable time.

Even before Col. Dunn issued his first regulations in regard to storage adjacent to railroads, it was surprisingly difficult to find railroad frontage in smaller towns. After a site is located with proper dimensions and with the most practical location for operating, and before the site is purchased, the matter of installation of a side-track is taken up tentatively with the railroad to ascertain that a side-track can be procured.

Also, before the property is purchased, the municipal ordinances should be examined to be sure there is no ordinance in force restricting the storage of petroleum products in such a way as to make the use of the proposed station site impractical. If any unreasonable ordinance is found to exist, efforts may be made to procure the modification of the ordinance to reasonable requirements.

When the oil company is ready to purchase the property an abstract and title must be ordered and, having some peculiar characteristics, a survey should also be made. It is customary to acquire the abstract to show the dedication of the abutting streets which serve the station and the deed through which the railroad acquired its adjoining right-of-way. A station site is useless unless it can be reached by trucks and tank wagons and it sometimes happens that a railroad frontage apparently abuts on an open street which in fact was never properly dedicated.

### Many Companies Hedged In

Many an oil company whose bulk stations were built years ago without an eye to the future, are seriously handicapped now because of the fact that adjoining land for the enlargement of their stations is impossible to obtain.

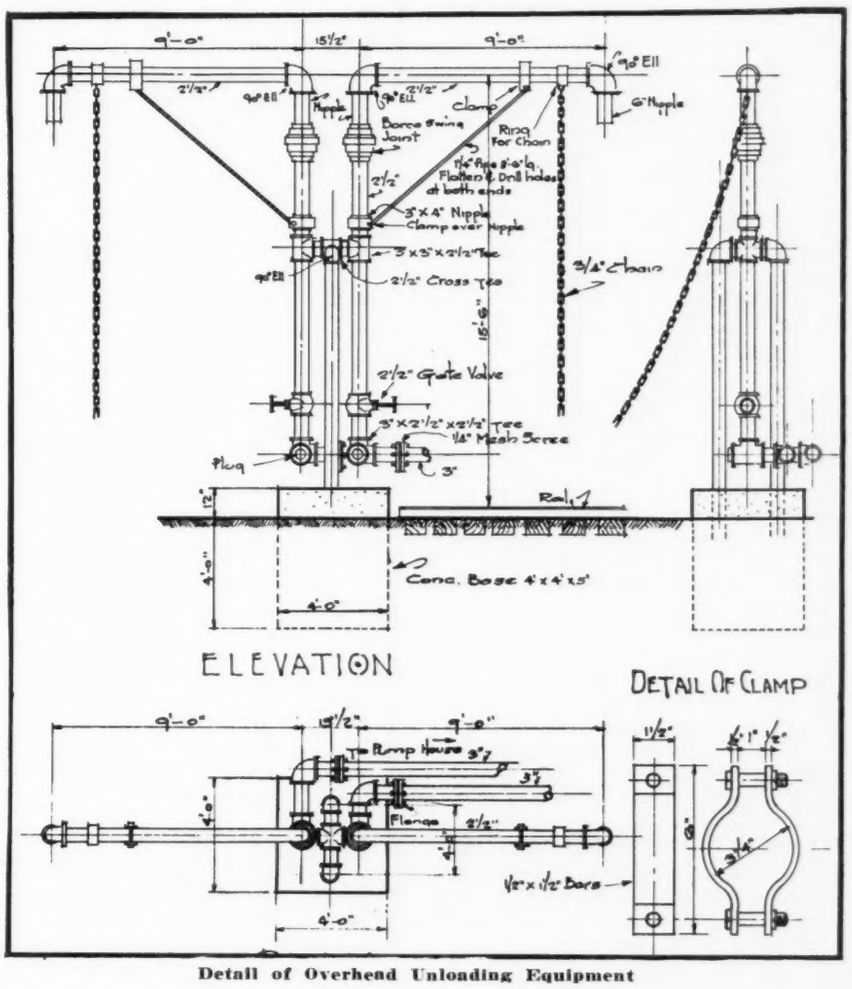
While it is important to plan for the future, it is equally important, of course, to build strictly for the present, because any equipment installed now that is not of immediate use but is expected to be needed later, runs up the amount of investment tied up in unproductive construction.

The answer to the problem of an elastic plant, as worked out by the Standard Oil Co. of Ohio, is the standardized station. This company has had a lot of experience in building and operating bulk stations. It has been in business for 35 or 40 years and has seen the transition of the oil industry from a kerosene to a gasoline basis and has built a lot of stations of various types and sizes. A. P. Coombe, president of the Standard of Ohio, testified last January before the LaFollette investigating committee that his company was operating 300 bulk stations at that time and undoubtedly some have been built since. This experience has brought a lot of knowledge about bulk stations.

According to J. A. Watterson, construction engineer of the company, four types of stations have been standardized on and one of these four types can easily be adapted to every location, from the big concrete, steel and brick plant that has been recently finished as the main station in Dayton, a city of 150,000 people, down to the small crossroads station out of which one or two drivers of horse-drawn tank wagons cover their country routes.

### One Station Described

In the first place, the company always buys the sites for its bulk stations and it takes into consideration the points set down above. Then a station is built closely fitting the present gallonage to be handled. A standard station, that at Ironton, O., a town of 14,000




**Detail of Overhead Unloading Equipment**

people, is shown in the accompanying photograph and a ground plan of the same station is also shown.

It will be seen that but a small part of the site is occupied by the present station and tankage. If it should become necessary to enlarge the warehouse to handle increasing business or to put in additional tankage, there is plenty of room to take care of them. The same is true of the garage and stable.

Inasmuch as probably the greater number of bulk stations over the country outside of those consisting merely of a tank or two, are in towns approximating Ironton, O., in size, this type of station will be described first. The Ironton station is one of the company's newest.

The site of the Ironton station is 175 by 400 feet, the ends and one side facing streets and the other side being bounded by the railroad track. It is tiled and drained by stone and sanitary sewers. It consists of three buildings, the warehouse, the combination garage and stable and the pumphouse.

The warehouse, 42 by 95 feet, with one story and basement, is of brick construction with steel beams, concrete floors and wireglass trunnion windows. One corner is partitioned off into a 12 by 12-foot room which is the office. At the rear of the building are the boiler room, coal bin and pump room. The pump room is to accommodate a steam-driven piston pump with 50-gallons a minute capacity for handling lubricating oil. The station at Ironton in one particular differs from the typical bulk station. Due to the fact that it is in the center of a mining district there is a big demand for black oil for the lubrication of mine cars and other rough machinery. To supply this business, there is a horizontal tank for black oil at the station and it is mostly to handle this black oil that the steam pump is necessary. The remainder of the warehouse space is for the storage of barreled and case goods.

### Six Trucks, Four Horses

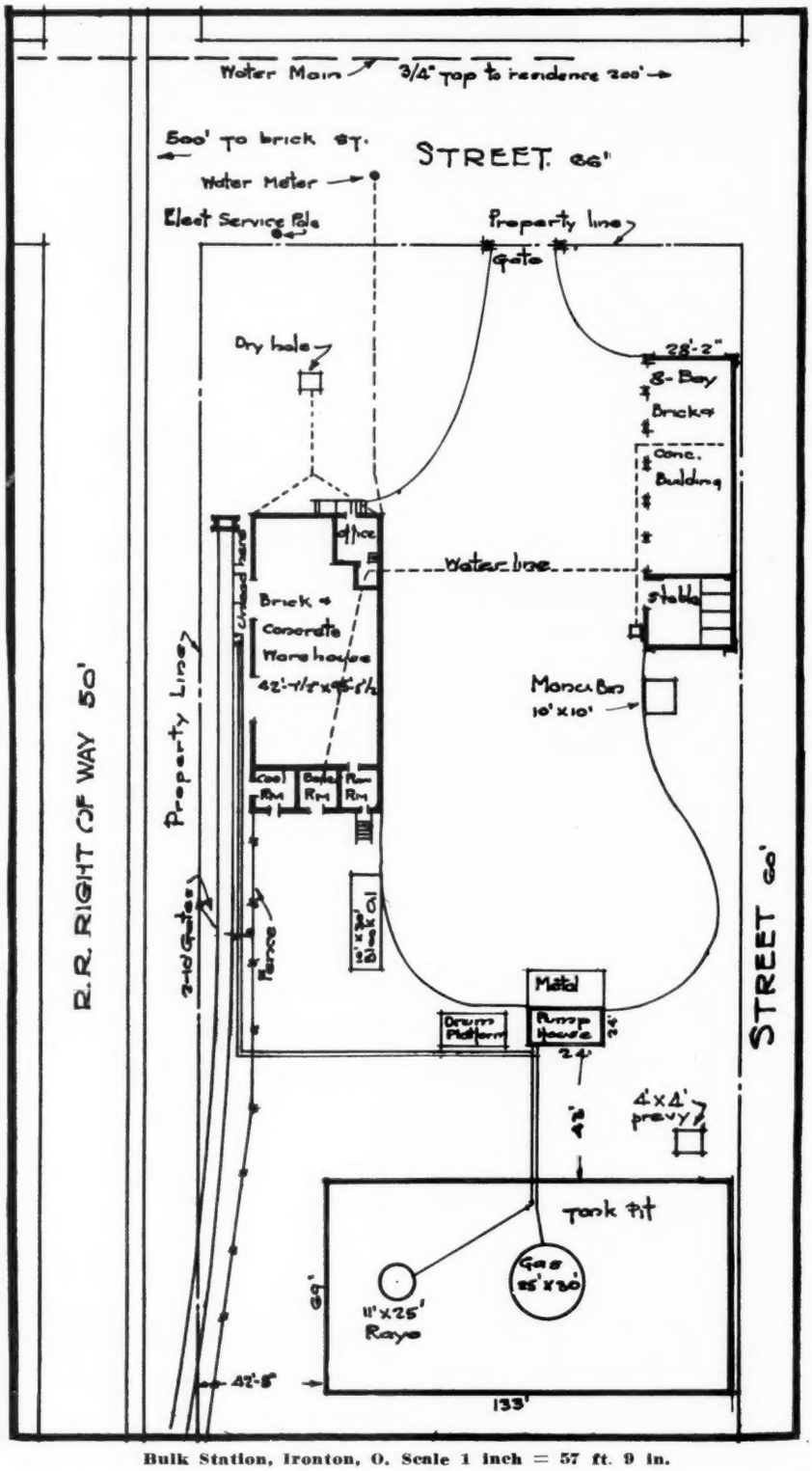
The garage and stable has accommodations for six tank trucks and tank wagons and four horses. The dimensions of this building, which is also of brick and steel construction, are 28 by 92 feet.

The pumphouse is a concrete floored sheet metal building with overhang, dimensions being 24 by 24 feet. The building itself is 24 by 12 and the other 12 feet takes in the overhang or canopy under which the tank trucks are loaded. This building houses the pumps for unloading tank cars and loading the trucks. There are two of these, rotary pumps, direct connected to a six-horsepower gas engine, the pumps have a capacity of 100 gallons a minute each. The suction lines on the pumps are three-inch and the discharge lines 2½-inch. The discharge line is led through the front wall of the building at the height of the top of a truck tank, and fitted with a swing arm through which the trucks are loaded.

While the Standard of Ohio formerly did not put canopies on the pumphouses to shelter the truck while loading, the use of canopies is now the rule, according to Mr. Watterson. The primary purpose of the canopy, he says, is to minimize the hazard of the gases escaping while a truck is being loaded from being fired by a spark from a passing locomotive. Most of the pump houses are close to the railroad track.

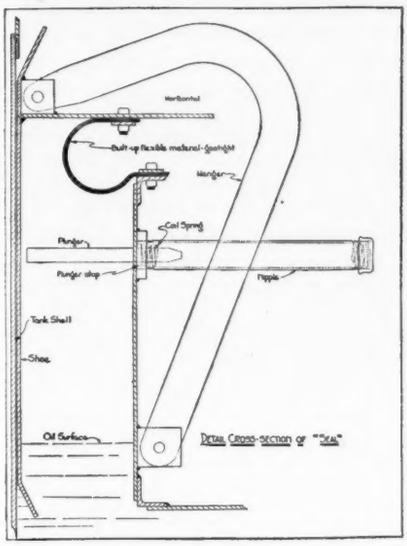
In addition to that, if a truck is being loaded in a heavy rain it is difficult to keep water from getting into the tank, which involves possibilities of trouble, so that the company has decided that the canopy over the loading rack is worth the expense.

The tank equipment at this station consists of one 25 by 30 foot gasoline tank with a capacity of about 110,000 gallons, a kerosene tank 11 by 25 feet, with a capacity of about 17,000 gallons, and a black oil tank 10 by 30 feet, capacity about 25,200 gallons. The gasoline and refined oil tanks are vertical and the black oil tank is horizontal. All the Standard's light oil tanks in the newer installations are vertical, primarily because the evaporation loss is




**Bulk Station, Ironton, O. Scale 1 inch = 57 ft. 9 in.**

## Questions & Answers on the Wiggins Floating Roof




*What are the essential parts of the roof?*

The float, which is the flat portion resting on the water and possessing a rim around the edge; the seal, which seals the gap between the float and the shell of the tank; and the rain control and rain drainage systems.

*What is the space between rim of float and tank shell? Is this space exposed to the air?*

Six inches. It is not exposed to the air but is closed by the seal.

*How is the space between rim of float and shell of tank sealed?*

This seal is a very ingenious device. A vertical plate, called the shoe, fits against the tank shell. It is supported by a hanger pivoted on the float rim. The space between shoe and float rim is closed by a plate and asbestos connection. This device reduces the space open to the air to almost nothing.

*Is the shoe close enough to the shell to prevent free evaporation?*

The shoe fits tightly against the tank shell. Practically the only space is at the vertical seams where the rivet heads make a slight air space.

*Is this slight air space of any consequence?*

No. Even assuming it to be wider than it really is, the exposed area is almost negligible. If the gap were as much as ½ inch, the total exposed area would be only 15 square feet in a 55,000 barrel tank against more than 10,000 square feet with a canopy roof.

*What keeps the shoe tight against the tank shell?*

The hanger is designed to keep the shoe in *parallel* contact with the tank shell.

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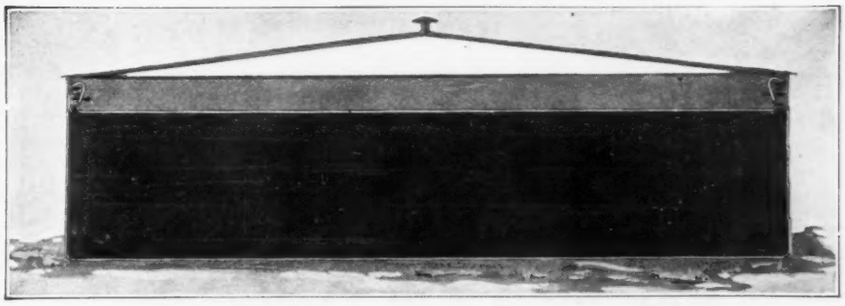
*Remove the Air and You Stop Evaporation*



# The Wiggins Floating Roof Stops Evaporation

You *can* stop evaporation in your tanks. Until now this has never been practicable; but the development of the Wiggins Floating Roof has made available to you and other oil men a means of stopping evaporation which is efficient, serviceable and wholly practical.

What happens when gasoline or crude is exposed in an open tank? Minute particles of the lighter fractions pass off of the surface in the form of vapor. This occurs also in an ordinary tank because there is an air space between liquid and roof. Naturally, when this air is forced out of the tank by breathing or filling, the vapor is taken with it and lost.

The way to prevent much evaporation is to blanket the surface of the liquid. The Wiggins Foating Roof is a practical means of so doing. It will prevent vaporization. It will save the millions of dollars worth of the best gasoline otherwise lost. It will raise the gravity of the refined product.

Evaporation is not the product of fanciful ideas. It is a fact that the oil industry must face, no matter how painful it is. The U. S. Bureau of Mines says that 7½ per cent of the total crude production is lost by the time the gasoline is shipped from the refinery. This means that 45,000,000 barrels of the cream of the gasoline will be lost out of the 600,000,000 barrels of crude produced this year. This waste will cost the industry around $200,000,000—truly a staggering sum. Add to this a fire loss of $20,000,000 and you see the total waste which the Wiggins Floating Roof will reduce.

Just one working tank alone will waste a most astounding total volume of gasoline in a year. A 55,000 barrel tank handling 10,000 barrels of crude a day will waste $10,000 worth of gasoline in a year. If it handles gasoline instead of crude the loss would be doubled. These figures are based on ten cent gasoline and are therefore low. Just how this and other astounding conclusions are reached will be explained in a bulletin now under preparation.

You may receive your copy by sending us—or having your secretary send us—the adjoining request slip.

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Your inquiries or orders will be handled promptly, and shipments will be made when promised.

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higher in horizontal tanks as more of the tank's surface is exposed to the direct rays of the sun when horizontal than when vertical, and secondarily because they take up less space when standing on end. Also it is less expensive to set them vertically.

### Lub Tanks Horizontal

All lubricating oil tanks of the company are horizontal except when placed in heated rooms inside buildings. The evaporation loss is not a factor with lubs and the horizontal position makes possible the use of steam coils in the tank with more efficiency in weather when the oil must be warmed to make it flow.

The light oil tanks are set in an earthen-diked enclosure, the diked-in space having, in accordance with fire regulations, a capacity equal to the capacity of the tanks. At a Standard bulk station the tanks are always placed in accordance with the ruling of the Bureau of Explosives B. C. L. 2084 as to distance from the main track of the railroad and in accordance with the Ohio fire marshal's rules as to distance from adjoining property lines.

Also they are placed as close to the pump house as practicable in order to use as little pipe as possible and thus cut down that expense. The lub tanks are set close to the pump house to make the work of the piston pump as light as possible.

All the piping at a Standard of Ohio bulk station is laid above ground. This is so that leaks may be immediately detected and so that repair will be easy. Where pipes are buried considerable losses may occur when a pipe develops a leak, before the man in charge is aware that the loss is going on.

### Pipes Above Ground

To lay the pipes directly on the ground would tend to excessive rust and corrosion from the soil and dampness, so the Standard lays the pipes a few inches above the ground. They are supported at intervals by inverted U's of two-inch pipe. These are made by screwing three lengths of pipe and two elbows together.

The points of the pipe support are set in small blocks of concrete. To prevent heaving from the action of frost, these concrete bases are run down into the ground 20 or 24 inches so as to give them a firm footing below the frost line.

One of the most troublesome problems that oil companies often experience is in building suitable supports for horizontal tanks. Many companies regard steel supports as too great a fire hazard. Concrete piers, unless they are properly constructed, often are heaved out of line by the frost and sometimes crack at the joints where the entire pier is not poured in one operation.

Then unless, enough piers are placed under the tank it is likely to sag out of shape and develop leaks.

The Standard has adopted a style of pier that is proving very satsfactory.

Regarding steel supports as dangerous because they will buckle and let the tank down in case of fire, the company has standardized on a concrete pier.

### Construction of Piers

The piers, which are 12 inches thick and usually nine feet high, are based on a solid concrete footer which is always at least three feet below the grade line and as much deeper as it is necessary to go to reach solid soil. Where conditions are favorable, the entire pier and footer are poured at one time but where this is not possible reinforcing rods are placed perpendicularly in the footer with their ends projecting above the top of the concrete far enough to give them a firm anchorage in the superstructure of the pier when it is poured, making pier and footer, in fact, practically a unit and eliminating the danger of cracking at the joint.

Special reinforcing is used in making the sides of the cradle so that the tips will not break off. The general design of the pillars and method of reinforcing are shown in the accompanying drawing. The sides of the cradle are so built that the tank rests on them for one fourth of its circumference on either side.

Experience has demonstrated that the piers should be placed under a tank at intervals not greater than eight feet five inches if the tank is to be prevented from sagging. Under a 30-foot tank the Standard puts four piers, but finds it not safe to put fewer than three piers under a 20-foot tank.

Another thing that experience has taught the Standard engineers that is often neglected in the building of bulk stations in general is that the seams of the tanks should be left accessible. The piers at Standard stations are always placed so that the seams are not covered and in case of a leak the workmen can get at all the rows of rivets all the way around the tank.

The Ironton station has a siding on which three cars can be unloaded at one time.

The station represents an investment of just under $40,000.

At all the newer stations of the company, unloading through the dome instead of through the bottom outlet valve is the rule because it is thought that overhead unloading reduces the hazard to a minimum.

While it is a little slower process than bottom unloading through most of the year, Mr. Watterson says that the thing practically evens up, taking the winter into consideration, because of the time lost in cold weather in thawing out and getting open the bottom outlet valves.

The company engineers have developed a very efficient and inexpensive piece of equipment for this work, a cut of which is reproduced here. The apparatus consists of an upright support of 3-inch pipe mounted on a solid concrete block, supporting a T to which are attached vertical lengths of three

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## ROMORT AIR and WATER STATION

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*If your name is not on our books permit us to show you.*

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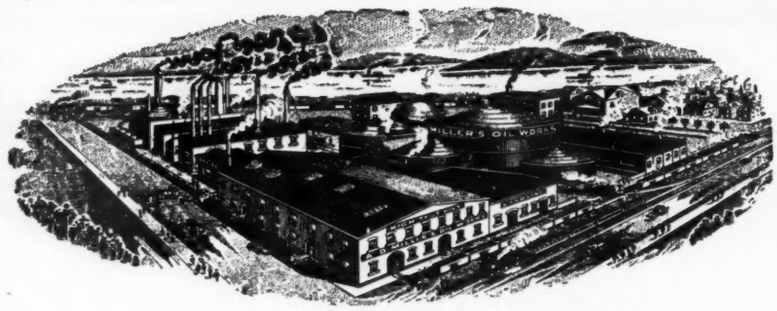

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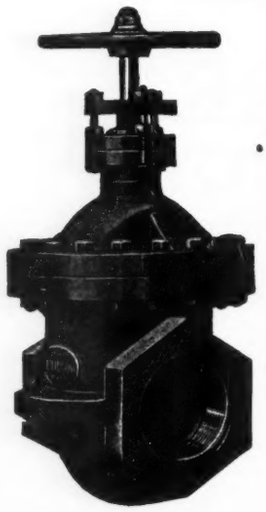

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inch pipe. Just above the T on each of the pipes, there is a ball joint, on which a swing arm operates. This arm swings out over the dome of the car and to it is attached a length of metal hose that reaches down to the bottom of the car. Static is prevented by the contact made by the metal of the hose with the bottom plates of the car.

Heavy duty pumps are needed to perform the added work of raising the liquid through the car dome and it is for this reason the company has standardized on 100-gallon a minute instead of the 50-gallon type that are more commonly used for the purpose.

## N. Texas Refiner Builds Bulk Stations

WICHITA FALLS, Nov. 22.—The American Refining Co. here has launched a campaign of building bulk stations to afford an outlet for its refined products, it was learned today from H. A. Allen, secretary and treasurer of the company. The work was begun only a few weeks ago and will be pushed rapidly during the winter months.

Suitable locations for bulk stations are being acquired in cities in Texas and in the southeast where there are favorable freight rates from north Texas. It is the plan of the corporation to have an outlet for at least half its output before spring.

The American plant here has a capacity of 6000 barrels of crude per day. Four units of the Dubbs process have been installed and made their first run this week. In addition the company is installing two units of the Cross process which will be ready for operation about Jan. 1.

With the two processes it is the plan of the American to run its crude down to coke and have no fuel oil to offer. Residue after skimming will be charged to the Dubbs process and run down to pressure distillate and coke. After rerunning the pressure distillate from the Dubbs units the heavier ends will be charged to the Cross units and cracked again.

## Examination For Engineer

WASHINGTON, Nov. 21.—The United States Civil Service Commission announces the following open competitive examination for associate petroleum engineer:

Receipts of application will close Dec. 26. The examination is to fill a vacancy in the Bureau of Mines, Department of the Interior, for duty at Bartlesville, Okla., at an entrance salary of $3,000 a year, and vacancies in positions requiring similar qualifications.

The duties consist of investigation work in Kansas oil fields with special reference to the application of different oil-well cementing operations for the exclusion of water from the wells.

# Indian's Move To Lawrenceville Gives Town A Thrill

Staff Special

LAWRENCEVILLE, ILL., Nov. 22. GEORGE C. ARMSTRONG, general manager of the plant of the Indian Refining Co. here, is one of the busiest men in southern Illinois right now. Not only is he supervising an extensive construction program in the refinery but he is an arrangement committee of one to receive the forces of the Indian when they move in solid formation from New York on Lawrenceville to make this town the general headquarters of the company.

Being chairman and membership of that committee means it is up to him to have the new office building he is putting up ready to furnish the organization members with an official home when they arrive. The vanguard of the moving forces—which will number about 200 when all get here—has arrived and they found the basement of the building finished and ready to furnish them with temporary quarters.

Mr. Armstrong is architect, construction superintendent and everything of the work of building the office building. He is doing that with one hand while he runs the refinery and supervises the refinery construction with the other.

The office building is a good looking one, two stories and basement, 50 by 200 feet. It is thoroughly fireproof, of concrete and brick construction. The outside is of yellow tapestry brick. Concrete floors and steel sash are used.

When the building is completed the basement will contain a cafeteria for the employes, filing room, rest rooms and so on. The first floor will be the domain of the accounting department and the second floor of the sales department.

When the decision was made to move the headquarters of the company to Lawrenceville in order to bring it more nearly into the center of the company's marketing territory and make organization more compact, the housing problem loomed up seriously.

Lawrenceville is not a large city. All the houses, practically, are occupied and the town had been building steadily to keep pace with its own normal need for houses. It looked as though it would be a hard job to find living quarters for the members of the enlarged organization.

The problem was put up to the Lawrenceville chamber of commerce, which of course, is delighted at the increase in the towns population and the added business it will bring. They would fix the housing situation right quick.

The business men of Lawrenceville formed a stock company capitalized at $150,000—and more will be forthcoming if needed—to buy land and build houses. The Indian took 25 per cent of the stock. Then the new company got busy. It bought a tract of land well situated for homesites and within easy distance of the refinery.

The land was cut up in to 85 lots and the building of houses began at once. Some 20 are under construction now and half a dozen or so are about ready to live in. These homes are to be sold at from $3000 to $5000 each to Indian employes, the stock company financing the deals. Little or no down payment will be demanded and the houses will be paid for in monthly installments like rent.

To assure quarters for the single men and girls who are coming out, the Indian has leased the Commercial hotel here and put it in shape to receive roomers. All the families in the town who are willing to rent rooms to the newcomers have been listed.

"Suppose some young man in your organization wants to get married but the houses have all been sold and he can't find a place to live?" Mr. Armstrong was asked.

"If there wasn't any house available the company would build him one," replied the refinery manager.

In the meantime, Lawrenceville is having such a thrill as it has not had before in recent years, over the prospect of the new arrivals. A fine new brick store is going up across the street from the hotel where there used to be a lot of shacks. The store is built in an L shape and in the angle of the L the Indian is building a fine brick filling station. And a new brick bank building is under way across the street from the courthouse.

Likely the people will change the name of the town to Indianville or Indiana or Redskinia or something before they get through.

Yes, the town is all agog, whatever that is.

And George C. Armstrong is busy.

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DOLGEVILLE, N. Y., Nov. 22.—W. H. Loomis Lumber Co., distributor in this territory for the Crew-Levick Co. oils, is erecting a 12,000 gallon storage tank for kerosene. The company also handles Tydol gasoline, for both wholesale and retail trade, and has a gasoline storage capacity of 20,000 gallons, said W. H. Loomis, president.

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JOPLIN, MO., Nov. 22.—C. B. Hood, manager of the Joplin Oil Co., says fine weather conditions have made business good in southwestern Missouri.

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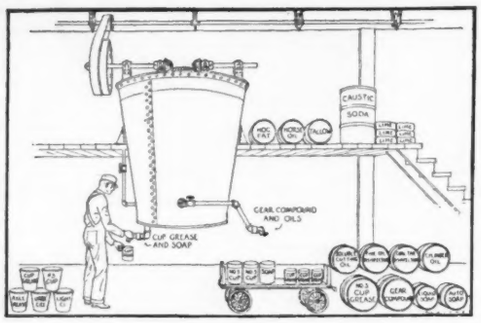


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## Club Planned To Boost Home Oil Burners

NEW YORK, Nov. 22.—More than 100 representatives of the petroleum industry, architects, burner manufacturers, combustion engineers and other interested individuals met Wednesday at a luncheon at the Reform club and indorsed a plan to organize a club to stimulate the use of oil burning heating plants in homes.

The meeting was arranged by George Williams and Richard Wotowich of Henry L. Doherty & Co. Mr. Doherty who was host, was unable to attend but a letter from him was read. It contained the following recommendations similar to those he made at the convention of the National Petroleum Association at Atlantic City in September:

"That we stimulate every oil company to develop as far as possible the utilization of oil, and to secure the widest possible application for every use which is developed.

"That we give support, encouragement and assistance to inventors and manufacturers of oil burning apparatus.

"That the industry as a whole shall co-operate to develop such interests for oil as the individual companies for competitive reasons are not warranted in doing."

Henry O. Loebell, head of the Combustion Utilities Co. in New York, said there were too many burners on the market and too many responsible manufacturers marketing products of inferior quality. Mr. Loebell, who is an authority on combustion engineering, said there are more than 1500 different types of burners now being made and sold, and he urged that when an association is formed, steps should be taken to aid the manufacturer of good and practical burners but the efforts of those who are making inefficient apparatus should be discouraged. He said that after a searching investigation of a large number of burners it was his opinion it would be possible to manufacture burners which would be so efficient that not more than 110 gallons of distillate would be the equivalent to a ton of good coal.

C. G. Sheffield, head of the furnace oil department, Standard Oil Co. of New Jersey, said one of the most important phases of the new industry would be the servicing of equipment installed. He suggested that this should be a duty of the burner manufacturer because the oil industry is subjected to more competition than the burner manufacturing industry. He agreed that there must be some satisfactory co-operation between the industries. He said the customer wants to know which is a good burner, which is a bad burner and that he wants to get authoritative advice, and this advice should come from a burner association, club or organization. Mr. Sheffield also suggested to the burner manufac-

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turers that one of the best things they could do to co-operate with the oil industry was to urge the purchaser of oil burning apparatus to install large storage tanks instead of small ones as the cost of many deliveries would necessarily have to be taken care of in the price for the fuel oil.

Dr. Van H. Manning, director of Research, American Petroleum Institute, said that as an individual he was highly in favor of the movement to heat homes with oil as an efficient substitute for anthracite coal and that he would be a booster for such work.

M. J. Byrne, Connecticut Oil Co., Waterbury, Conn., said he was highly in favor of proper utilization of oil for house heating purposes and stated that because of the infancy of the industry, a large number of different types of burners, in his opinion, would not be a menace. He urged that the designing and manufacture of burners be stimulated and that inventors be spurred to produce a highly efficient unit.

Albert J. Squier, Warren Lubricant Co., New York, was chosen chairman.

## Wisconsin Jobbers Rush Advertising Plan

MILWAUKEE, Nov. 22—In order to get an early start next month in launching their joint advertising campaign and the coupon exchange, the Independent oil men of Wisconsin will hold their December meeting earlier than usual. This was agreed upon here Nov. 14 at the regular monthly meeting. By established precedent the Wisconsin jobbers assemble every month on the middle Wednesday. This was the first regular meeting since they entertained the National Petroleum Marketers Association on Oct. 23 to 25.

The oil men got together at the Plankinton hotel here last Wednesday with a light program of unfinished business to dispose of, and after the business was handled they discussed the joint advertising campaign of the Independent Oil Men of America and the coupon interchange of the N.P.M.A. which has been tried out in a limited way in Wisconsin already. They agreed that they wanted quick action on both matters and adjourned to meet again Dec. 5.

The outdoor advertising plan, to erect billboards along trunk highways between the marketing areas of I.O.M.A. members is a recent development of the Independent advertising program. Wisconsin jobbers belong to the I.O.M.A. in considerable numbers and they wish to combine the influence of their local publicity. Besides some of them want to tie the Independents of the state together with the gallonage coupon exchange.

Boosters of the proposition believe that before last spring brings tourists into Wisconsin from the south and east, the oil men will be ready to make them feel at home with universal coupon service and billboards to direct them to stations of Independents.

# New Owner Works Old Shallow Field To Make It Pay Again

By Ward K. Halbert
STAFF REPRESENTATIVE

CHICAGO, Nov. 16.

TWENTY idle years have reduced the equipment in the Jasper county, Indiana, oil field to a rusted and worm-eaten ruin. Twenty eventful years in other fields have almost blotted out the memory of Jasper county from the minds of those who knew it best. And twenty years of litigation at last have voided the injunction which paralyzed the little field in 1904, the height of its activity. Now an effort is being made to bring it back to life.

Jasper county never was an important element in the market. It was discovered by an English firm in 1899. Other interests took a hand in the development before it got in litigation in 1903. A court order halted activity a year later and forbade molesting any equipment. Two or three boilers totter on piles of loose rock. Prairie grass holds the shackle rods to the ground, and the pumping jacks rattle in the wind. There is still a faint smell of petroleum about the place but the once boisterous oil town of Asphaltum is a group of four or five houses.

Gifford, Ind., on the Monon railroad, 90 miles south of Chicago, is the closest post office. It is a mile and a half from the field. Even the old spur track which connected Asphaltum with the railroad has been pulled out. The three new rigs now up were brought to their locations by truck. Each is operated by a different company, but the men on "tower" are true to type, putting out no information to strangers who pass by in automobiles and get out and ask questions. They are just drilling, and anybody can tell that from the road.

### History is Lacking

Except in the minds of former operators and disappointed investors there is little record of the field. The best account of it is printed in the 28th annual report of the geological department of the state of Indiana. It was written by W. S. Blatchley in 1903 and is now out of print. The record is fairly thorough however for Mr. Blatchley, then state geologist, had investigated the field for the state and made some special reports for the protection of the investing public. In Jasper county, as near other oil fields, promoters had procured acreage and inaugurated stock selling schemes.

The major portion of the wells are on the old Gifford estate, well known in that part of Indiana. In March, 1921, George F. Gifford, administrator of the estate, leased the property again. It was procured by John B. Belmont.

Mr. Belmont is a native of the island of Corsica and, in the employ of Tailor & Flint of Manchester, Eng., took part in the development of a number of the oil fields of two hemispheres until he severed his connection with his firm in 1914. Since then he has devoted his time mostly to his own interests in the United States.

His lease of the Gifford acreage calls for a deep test and he has a standard rig drilling. Although he admits a keen interest in what the test may reveal it has no part in the plans to rehabilitate the old wells. The test is in Gilliam township, in the middle of Sec. 9, Twp. 30 N., range 5 E.

### Was Cheap Drilling

The Jasper county field would classify today as "grubbing hoe production." The wells were drilled with a Star rig. During the short and rapid development period about 550 wells were completed, depths ranging between 125 and 200 feet and in Devonian formation. Two of them were failures. Quoting from Mr. Blatchley's report, "There is probably no oil field in the world in which the expense of development is as low as in the Jasper county district. The oil formation lies at an extremely shallow depth, and the area which has been found to be petroliferous seems to be fairly uniform in character, resulting in few wells which are non-productive."

Of course the wells are small producers. None of them ever flowed naturally for a few days. The record well was the No. 6 Gifford which pumped six barrels a day for nearly three years. It is said that well produced 4000 barrels during the first six weeks of its life, following a light shot.

The oil bearing stratum is 40 feet in thickness, Mr. Belmont and the Geological report agree. It is a black lime formation and the upper half of it is richer than the lower part. So dense was the formation that the recovery of oil from the early wells was not fast enough to satisfy the developers and they made locations unusually close together. Some of the wells are only 80 feet apart. This was good business in those days because of the low cost of drilling to such shallow depths.

### Only One String

The log of the wells is in the geologist's account. He says the first 50 feet is sand, clay and loam under which lies a bed of close-grained black shale 45 to 55 feet thick. Under the impervious shale lies the oil bearing limestone. Experience proved that the shale did not cave in drilling and the operators set their six-inch casing on it, and that is all the casing they used. Drilling was such quick work, according to the geologist, that "an expert crew completed a bore in 23 hours actual drilling time."

The oil has no gasoline nor kerosene content. In the old days when there were two little refineries in or near the field they only turned out lubricating oil and asphalt. The former was made in several grades and the latter was used in the manufaceure of roofing. Mariner & Hoskins of Chicago, after making a chemical analysis of the oil, pronounced it 97 per cent lubricant. It is certain that the farmers of the region have used the crude to oil their machinery for a quarter of a century, without any treatment at all. Inasmuch as some of the holes have been open and standing full of oil for all these years, it has been free to whoever would drive by to fill his can. Mariner & Hoskins' analysis is as follows:

| | |
|---|---|
| Specific Gravity | 20.8 degrees Baume |
| Cold Test | 7 degrees F. |
| Flash Point | 410 degrees F. |
| Fire Test | 437 degrees F. |
| Sulphur | 1.26 per cent |
| Asphaltic Matter | 2.90 per cent |

The history of the litigation is rather complicated. The first well was drilled on the Gifford estate by an English syndicate, referred to in some places as the Byrd Syndicate and elsewhere as the Federal Oil & Asphaltum Co. The organization drilled 300 wells or more and pumped 80 of them to fill a contract with the Indiana Asphaltum Co., for 125 barrels of oil a day. The oil was selling in the open market for $1.10 a barrel but the syndicate's contract was for a lower figure.

As the story goes, some disagreement arose over the price, which involved other operators in the field after about four years of operation. Among the other producers was E. T. Mudge of Chicago. The Kansas field was opening up about that time and when the litigation halted business for a few months the two refiners in the field dismantled their plants and went west. Stock promoters had exploited the field some but with little success, due to the vigilance of state authority.

After a year or so of delay some of the operators tried to salvage part of the equipment from their leases and were halted by injunction. The result is that the steel is still on the ground. A junk buyer in the neighborhood has

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estimated the pull rods alone at six or eight car loads. The wells being so close together, the area is literally netted with them. Now, however they are broken and bent and rusted badly.

**Equipment is a Loss**

Two ruins of central power houses are rotted down. Several tanks and boilers are past recovery. The condition of casing and buried pipe lines is not known positively. Pieces of the two filtration plants remain to show where they stood and most of the pumping jacks are past recognition. Along with the lease Mr. Belmont got the right to use such of the material as could be recovered.

He knows about what it was like when installed, because he was on the ground part of the time, but in the intervening 20 years has spent much time in foreign fields.

Since he procured the lease Mr. Belmont has examined about 50 of the wells. With a crew he cleaned out two or three of them, put them on the pump and states none makes less than two barrels a day. Besides the Gifford lease he recently bought two tracts outright, one of 60 and one of 92 acres. The larger of them he rented to a local farmer to raise a crop of corn upon, only taking the trouble to examine and plug the remaining wells. He declares this same piece of land only changed hands for $1,500,000 but admits it cost him much less.

There are some tracts in the vicinity which other firms are developing. One standard and one star rig are in sight of Mr. Belmont's test but neither is as far along as his own which is less than 300 feet deep now. In view of present market conditions he says he is in no hurry to develop the property, either at known or unknown producing levels, and is glad his lease allows him ample time. The known extent of the shallow field is about seven square miles. It is nearly two miles wide and slightly more than three and a half miles long, lying in a northeast and southwest direction. The exact amount of oil which the field has given up altogether is not known by anybody accurately enough to make a safe estimate.

**Continental Refining Company**
**Oil City, Pa.**

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## McMahon Leaves Sapulpa

CHICAGO, Nov. 23.—F. E. McMahon, who has been manager of sales for the Sapulpa Refining Co. for sometime past, and also vice president, has resigned. He expects to take a rest for a while before getting back in the oil business. Mr. McMahon has been with the company for a good many years, starting in their Tulsa office and working up finally to managing sales. He opened a Chicago office for the company the past year. The company's plant has shut down due to the hard times on the oil business. All the stocks have been sold and the plant will probably be shut down for some little time.

# A Method Of Expressing The Volatility Of Motor Fuel Gasolines

By W. A. Gruse

Mellon Institute Of Industrial Research, Pittsburgh

Delivered Before The Petroleum Division, American Chemical Society, Milwaukee, Sept. 12

THE importance of the dew point of a gasoline as an expression of its effective volatility was first pointed out by Wilson and Barnard (J. Ind. Eng. Chem., 13. 906 (1921; J. Soc. Automotive Eng., 12. 287 (1923)). The dew-point is the lowest temperature at which a gasoline is completely vaporized when in contact with a given amount of air; for the ordinary motor the mixture proportions by weight vary from 12 of air to one of gasoline for maximum power, to 15 of air to one of gasoline for maximum efficiency. In order to vaporize a gasoline completely for use in a motor, the mixture of air and gasoline must be heated to the dew-point of that particular mixture (the time element must be considered in a motor problem); heating beyond this point is undesirable because it involves a loss in volumetric efficiency.

It is now customary to estimate the volatility of a gasoline by an inspection of the distillation curve. The expression of volatility by a curve is not as definite, however, as by a single point, and the dew-point temperature, which evaluates both the light and heavy ends of the fuel, serves admirably for this purpose. The dew-point may be measured by the indirect method of Wilson and Barnard (J. Ind. Eng. Chem., 13. 906 (1921)) or directly by the method devised by the author (J. Ind. Eng. Chem., 15 (1923)), in which a mixture of air and vaporized gasoline, whose composition is known, is blown against a metallic mirror. The mirror is cooled internally until a dew of gasoline is observed on its urface, and the temperature of the mirror at this point is noted as dew-point of that particular mixture.

It should be noted that the indirect method of Wilson and Barnard yields results which are lower than those measured directly, so that a constant of 40° F. should be added to measurements made in this way in order to obtain results which agree with the figures obtained directly. The correctness of the direct determinations has been confirmed by work at the Bureau of Standards, using another method.

In order to give some idea of the range of the dew-point figures, distillation data and dew-points are given for a number of gasolines. The first three are commercial gasolines bought in the open market in Pittsburgh; the rest are fuels used in the recent co-operative tests conducted at the Bureau of Standards.

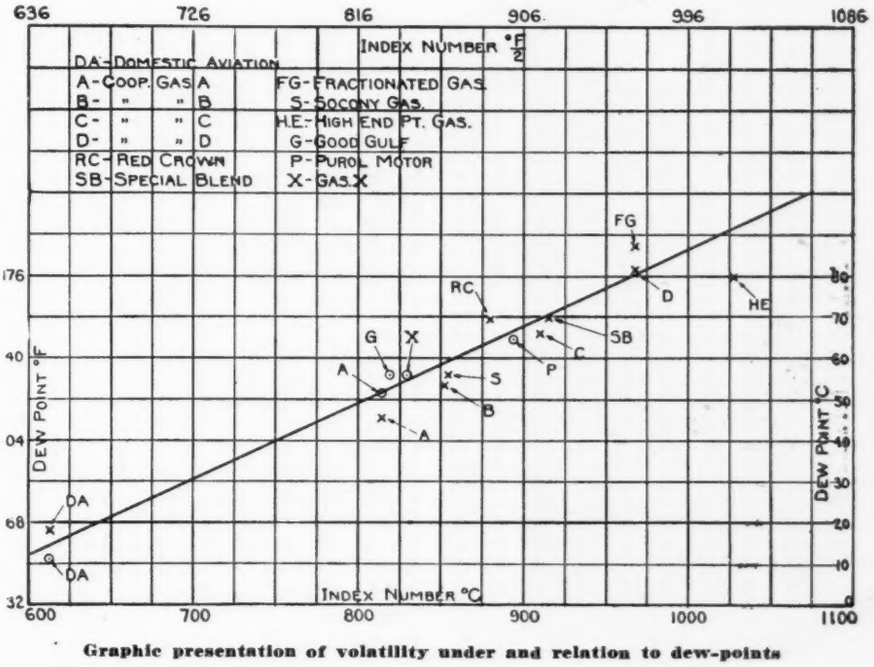
### Relation Of Dew Points To Distillation Temperatures

| Fuel | Init. | 10% | 20% | 50% | 70% | 80% | 90% | End | Dew-Point 12–1 | Dew-Point 15–1 |
|---|---|---|---|---|---|---|---|---|---|---|
| Purol Motor | 107 | 165 | 206 | 282 | 325 | 351 | 387 | 434 | 161° | 149° |
| Gasol. X | 114 | 174 | 204 | 261 | 297 | 320 | 356 | 414 | 147° | 133° |
| Good Gulf | 107 | 151 | 176 | 252 | 295 | 327 | 365 | 426 | 147° | 133° |
| Coop. Gas A | 120 | 181 | 201 | 250 | 283 | 301 | 341 | 404 | 129° | 124° |
| Coop. Gas D | 130 | 192 | 220 | 282 | 339 | 381 | 425 | 472 | ..above | 167° |
| Domestic Aviation | 127 | 160 | 171 | 199 | 219 | 232 | 252 | 293 | 63° | 52° |

The simplest dew-point determination is difficult compared with a distillation test, and Wilson and Barnard noted an empirical linear relation between the dew-point of any gasoline and the 85 per cent point on the distillation curve, by which the approximate dew-point could be determined from the 85 per cent point. This relationship holds fairly well for gasolines whose distillation curves have the same shape, but does not fit cases in which the composition of the fuels is markedly different. Examples are shown in Wilson and Barnard's data in which gasolines with the same 85 per cent point to within 2° F. differ in dew point by 32° F.; or in which gasolines with the same dew-point have 85 per cent points 30° apart.

In the November 19th issue of Chemical and Metallurgical Engineering, the author has outlined an attempt to substitute a better relationship than that using the 85 per cent point. It was felt that certain regions on the distillation curve should be weighted, especially the first and last portions, since they are related to the starting, accelerating and oil-diluting tendencies of the fuel. The author's work on dew-point determinations had shown that the end-point has a large influence on the effective volatility so this also must be taken into account.

By cut-and-dry methods it was found that an index number could be made by adding together the figures for the 10 per cent, 20 per cent, 50 per cent, 70 per cent, 90 per cent, and end points and dividing by two for convenience, which bear a direct linear relation to the dew-point of all the gasolines worked with, and that, when this relationship was plotted for one set of fuels, the points for another set of fuels could be placed on the curve with good agreement. This is shown by the accompany-




**Graphic presentation of volatility under and relation to dew-points**

## Volatility Index For Gasoline Compared With Dew-Points

| Fuel | Index No. °F | Dew-point 15 to 1 | |
|---|---|---|---|
| | | Direct | Indirect—const. |
| *Coop. Gasoline | | | |
| A | 819 | 123° | 115° |
| B | 864 | .... | 129° |
| C | 915 | .... | 151° |
| D | 966 | 167° | 180° |
| Red Crown | 885 | .... | 158° |
| Good Gulf | 832 | 135° | 133° |
| Domestic Aviation | 647 | 52° | 62° |
| Gasoline X | 843 | 131° | 133° |
| Socony | 867 | .... | 138° |
| Purol Motor | 901 | 153° | 149° |

*These four grades are the gasolines, used in the cooperative tests, at the Bureau of Standards in which the Society of Automotive Engineers and the American Petroleum Institute both took part. Their purpose was to determine the general efficiency of present commercial grades of motor gasoline.

ing chart, in which the circles are points given by dew-points directly determined by the author, and the crosses are points given by the indirect method of Wilson and Barnard; the latter were placed on the chart after the line had been drawn to the circle points.

The agreement is seen to be fairly good; it is somewhat better than the relationship shown by the 85 per cent point, especially for fuels of different composition. The volatility index made up in this way may be used to determine approximate dew-points, or may be determined from dew-points by the use of this chart. It is believed that the index may be of service as an approximate expression of the volatility of motor fuels, of their general performance in a motor, and perhaps of the extent to which they might be expected to dilute crank case lubricating oil.

As examples of the size of the index number, its values, together with the dew points are tabulated for the four co-operative fuel research gasolines (J. Soc. Automotive Eng., 13, 3, (1923)) and for several commercial gasolines.

The points in this paper may be summarized as follows:

1. The dew-point is the best indication of the effective volatility of a gasoline.

2. A volatility index may be made up for any gasoline by taking half the sum of the 10 per cent, 20 per cent, 50 per cent, 70 per cent, 90 per cent, and end-points expressed in °F.

3. This volatility index bears a fairly good linear relation to the dew-point and may be used to indicate comparatively the general characteristics of a gasoline.

The writer is indebted to Dr. W. F. Faragher of Mellon Institute for helpful suggestions in this work.

## Freight Transit By Truck Before Commission

WASHINGTON, Nov. 22.—The Interstate Commerce Commission may soon formally recognize automobile truck lines as adjuncts to railroad freight transportation. The regulating body held a hearing on that subject recently and no lawyer appeared to contend the legal restrictions consequently the discussion was all one sided.

Henry Thurtell, one time chief examiner for the commission, representing two steamship lines and their railroad connections, said that, for instance, the Baltimore and Ohio could arrange to serve Richmond, Va. which is 120 miles from its rails, by means of trucks. He added that there was nothing in the law which would warrant the commission in declaring illegal the tariffs filed by railroads in such a case.

Thurtell argued that, if it was legal for two railroads to bridge a gap of a few miles, there could be nothing illegal if they found it profitable, to provide for carrying goods for unlimited distances under such arrangements. The Commission could control the truck lines only through its railroad, the responsible party, so he concluded.

Wilbur LaRoe, Jr., also a former chief examiner, argued in behalf of the Port of New York Authority. This organization contended that any order from the federal regulating body which would tend to keep down the earnings of terminals provided for the trunk lines would tend to make it harder for the City of New York to finance their vast terminal proposition. He warned the commission to do nothing to give the trunk lines an excuse for shifting the burden of getting freight to and from Manhattan Island, from the trunk lines to the shoulders of New York shippers and receivers of freight.

A legal foothold for the investigation was furnished by the fact that the truck line appeared in the tariff of the Starin and New Haven and Clyde steamer lines (the informal instigators of the investigation) as a partner in the joint undertaking, notwithstanding the fact that the law requires the filing of tariffs only by carriers by railroad or partly by railroad and partly by water.

The attorneys who discussed the matter frankly admitted that the inclusion of the names of the motor truck lines as partners in the joint enterprises was not legal or necessary.

CHICAGO, Nov. 23.—Underwriters' Laboratories usually publishes their List of Inspected Automotive Appliances every six months, in April and October. The October issue has not been prepared this year, owing to a large number of changes and additions about to be made in the list. It has been thought best to defer the next issue until April, 1924, by which time the list will be in more complete and permanent form.

# Oil Patents Issued In October

## Refining

### New Oil Distilling Process

No. 1,472,116. Dated October 30, 1923, Henry L. Doherty, New York, N. Y. Process of Distilling Oil, Class 196, Sub-class 27, Filed January 12, 1918, 24 claims.

Crude oil or other petroleum oil is distilled in a number of separate layers taking the vapors from each succeeding layer and supplying it to heat the next preceding layer. Instead of steam to lower the boiling point a carrier gas is circulated through the layers passing through perforations in the plates between each layer which are large enough to permit passage of gases but prevent passage of oil. The various fractions may be readily condensed by taking the vapors from each layer.

### Air Condenser for Still

No. 1,472,075. Dated October 30, 1923, Joseph W. Lewis, Philadelphia, Pennsylvania. Petroleum-Treating Apparatus, filed October 28, 1920, Class 257, Sub-class 36, Assigned to The Atlantic Refining Company, of Philadelphia, Pennsylvania, a corporation of Pennsylvania, 17 Claims.
(Original application filed April 19, 1917, Ser. No. 163, 171)

An air condenser located above a still comprises initial and terminal manifolds, upwardly extending and downwardly returning pipes connecting the initial and terminal manifolds, and pipes connecting said upwardly and downwardly extending pipes so as to connect a point remote from the initial manifold to a point adjacent one end of the terminal manifold. A return pipe leads back to the still and a reducing valve releases some of the pressure after passing the condenser.

### Carbon Deposit Remover

No. 1,470,359. Dated October 9, 1923, Charles J Greenstreet, St. Louis, Mo. Process of Removing Carbon from Metal Pipes. Class 196, Sub-class 25. Filed April 17, 1917. Assigned to Gasolene Corporation, a corporation of Delaware, 3 claims.

To remove carbon deposits from inside a tubular or other heater, air or other oxygen containing gas is mixed with steam and fed in while the heater is still hot to effect the oxidation of the carbon. If care is taken to prevent the too rapid oxidation and excessive local heating from use of oxygen containing gas alone, as for example by its intermittent supply in limited amounts, the steam may be dispensed with.

### Oil Treating Device

No. 1,470,353. Dated October 9, 1923, Gustav Egloff and Harry P. Benner, Independence, Kansas. Apparatus for Treating Oil. Class 196, Sub-class 14. Filed August 23, 1920. Assigned to Universal Oil Products Company a corporation of South Dakota. 3 claims.

A pipe leads from each end of the vapor space of a cracking still to dephlegmators; valved horizontal draw-off pipes lead from each dephlegmator at different heights to a common header located between said dephlegmators. The common header is provided with a vapor outlet while each draw-off pipe is provided with a pipe for returning the condensate to the heater.

### Used Oil Reclaiming Process

No. 1,469,426. Dated October 2, 1923, James Roy Miller, Pittsburgh, Pa. Process for Reclaiming Used Oil. Filed January 7, 1921. Class 196, Sub-class 26. 2 claims. (Continuation in part of Miller Patent No. 1,359,614, Nov. 6, 1920.)

To reclaim crank case and similar impure oils they are first steamed at a temperature of approximately 210 degrees to 220 degrees F. until having the desired flash point and afterwards cooled to about 180 degrees F. A soap solution is next added and permitted to stand until foreign matter is in removable condition, when the temperature is raised to about 210 degrees to 220 degrees F. and maintained there until the moisture has been driven off, when the temperature is lowered to about 160 degrees F. to 180 degrees F. to settle the foreign matter.

## Shale

### Shale Retort

No. 1,471,492. Dated October 23, 1923, William A. Lamb, Denver, Colo. Shale Retort. Class 196, Sub-class 19. Filed December 6, 1920. One-Half assigned to Norman S. Ballantine, of Denver, Colo. 6 claims.

A shale retort is provided with a series of troughs, each provided with two series of rotary blades. The blades of one series are serrated to agitate the material without carrying the material along, while the other series has smooth blades adapted to scrape the bottom of the trough and carry the material over into the next trough.

### Oil Shale Distilling Treatment

No 1,469,628. Dated October 2, 1923, Roy C. Dundas, Los Angeles, Cal. and Raymond T. Howes, Santa Maria, California. Treatment of Oil Shale. Class 196, Sub-class 21. Filed December 23, 1921. Assigned to S E. Company, a corporation of Delaware. 5 claims.

Shale is distilled by the heat of internal combustion by confining a charge of shale in a closed chamber, igniting the top stratum, causing air to pass downwardly through the charge to create a zone of internal combustion which moves downward slowly through the charge. A gas may be introduced with the air to modify its oxidizing action.

## Production

### Heat, Clay to Separate Hydrocarbons and Water

No. 1,472,385 Dated October 30, 1923 Walter Arthur Brown, Los Angeles, Cal. Process of Separating Hydrocarbons from Water. Class 196, Sub-class 25. Filed February 24,1919. 9 claims.

To separate a mixture of hydrocarbons and water a finely divided precipitant such as an absorbent clay is added. The mixture is heated under a pressure sufficient to prevent vaporization of the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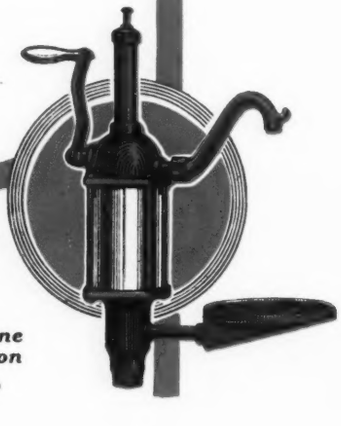

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water but to allow vaporization of the lighter hydrocarbons, then allowing the water and precipitant to settle.

### To Separate Hydrocarbons and Water With Alcohol

No. 1,472,384. Dated October 30, 1923, Walter Arthur Brown, Los Angeles, Cal. Process of Separating Hydrocarbons from Water. Class 196, Sub-class 25. Filed February 24, 1919. 4 claims.

To separate hydrocarbons and water, alcohol is added to the mixture to free the water from the hydrocarbons, after which the mixture is heated under a pressure sufficient to prevent the vaporization of the water but to allow the alcohol and hydrocarbons to be vaporized, after which the alcohol is separated from the hydrocarbons.

### To Prevent Evaporation

No. 1,471,705. Dated October 23, 1923. Hollis P. Porter, Tulsa, Oklahoma. Apparatus for Treating Fresh Petroleum. Class 183, Sub-class 3. Filed October 3, 1917. 7 claims.

Instead of the usual "flow-tank" into which oil flows from the well, the oil is passed into a closed vessel under a vacuum where the water separates out and the vacuum pump takes off some of the volatiles to prevent their loss into the atmosphere by evaporation.

## Natural Gasoline

### For Condensing Casing-head Gas

No. 1,470,116. Dated October 9, 1923, George E. Gray, Compton, Cal. Apparatus and Process for Condensing Casing-Head Gas and the Like. Class 196, Sub-class 25. Filed October 28, 1920. 5 claims.

Casing-head gas and the like is condensed by passing it through a finely divided metallic substance such as metal wool which is cooled by a coil embedded therein and through which a cooling medium passes. The uncondensed gases are led through a second vessel containing metal wool in which a heavy hydrocarbon liquid also passes to absorb a portion of the gas.

## Misleading and Deceptive

WASHINGTON, Nov. 26.—Misleading and deceptive statements in the offering for sale of oil stock is charged against the Coast States Oil Co., of Washington, in a complaint issued by the Federal Trade Commission. J. C. Van Slyke, L. Clair Van Slyke, W. H. Labofish, and J. W. Hood, officers and representatives of the company, are also named as individuals in the citation.

The respondents, the complaint states, advertised, published and circulated by means of prospectuses and otherwise, misleading assertions and statements concerning the operations, finances, and prospects of the Coast States Oil Co. Further allegations are that erroneous representations, particularly as to the extent and value of the company's corporate holdings; the number of acres of land owned or leased; and the production of oil wells located on the corporation's property, were circulated in an effort to induce the sale of respondents' oil stock.

## Italy's Oil Imports Greater This Year

WASHINGTON, Nov. 22.—Petroleum and petroleum products imported into Italy in the first half of 1923 were greater than in the corresponding time of 1922, according to reports from Trade Commissioner A. A. Osborne at Rome to the Department of Commerce.

Larger imports in this year were observable in the cases of crude oil, kerosene, gasoline, residuum and paraffin wax, but smaller imports characterized lubricants and unspecified products, as compared with the first half of last year.

United States as a source of Italy's oil supplies played a more prominent part this year. The percentages of total imports by quantities, originating in the United States, for crude and the chief products were, respectively, for the first half of 1923, as follows (corresponding percentages in the first half of 1922 in parentheses): Crude oil 29.3 (not given in the first half of 1922), lubricants 93.2 (94.0), kerosene 65.4 (57.9), gasoline 53.6 (19.5), residuum 39.6 (33.0), paraffin wax 89.9 (64.3), other products not specified 13.8 (32.5).

Russian crude and products entered the Italian market in 1923, supplying about one eighth of the amount of crude imported and one eleventh of the amount of kerosene.

Imports of Venezuelan crude oil for the third quarter of 1923 totaled 1,145,452 barrels compared with 273,031 barrels the first quarter and 878,668 barrels during the second quarter. Principal exports for third quarter were 78,000 barrels of crude oil to Fall River, Mass., and 70,000 barrels to Perth Amboy. Larger shipments for fuel oil were 197,750 barrels to Las Palmas, Canary Islands, 109,000 barrels to Colon, Canal Zone and smaller amounts to Spain, Holland, Italy, Portugal and British West Indies, in addition to bunkers of steamers of 19,795 barrels.

Gasoline shipments included 1,008,000 gallons to Great Britain, 4,657,750 gallons to Porto Rico, 88,000 gallons to Jamaica and less amounts to other islands of the West Indies and to Venezuela. During the quarter there was a cargo of 500,000 gallons of bulk kerosene billed to Great Britain, 85,000 gallons for Porto Rico in addition to smaller quantities to Colombia, Guadeloupe, Haiti, Jamaica, Martinique, San Domingo and Venezuela.

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BRIDGMAN, MICH., Nov. 26.—The Gafill Oil Co. invited its station men and truck drivers to a dinner recently at the Fowler Hotel at Niles, the dinner was a great success, according to Roscoe Decker, station manager of the company. The purpose of the affair was to give the men ideas on how to get winter trade and how to make the dull months pay, Mr. Decker said.

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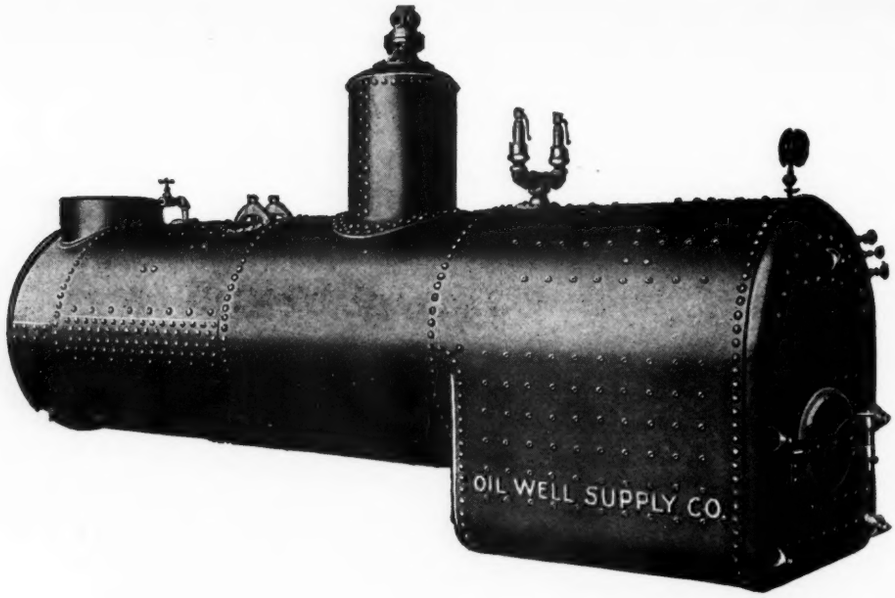
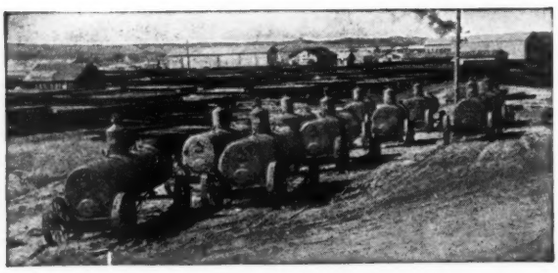



# A. S. M. E. CODE BOILERS



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All operations during construction and also the final test are carefully inspected by an inspector who has been examined and licensed for such work by the States having the A. S. M. E. Boiler Code in operation. This inspector is not in our employ but is employed by a company making a business of furnishing such inspectors.

All boilers upon completion carry a stamping in accordance with the Code.

"Oilwell" Oil Country Boilers are made in various sizes from 25 to 100 H. P., and in locomotive and tubular (A. S. M. E. Code), Burma and Canadian, and regular oil country locomotive types. For complete information write for Bulletin No. 41.

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# PRODUCTION SECTION

## Alberta Test Is Rated At 100 Barrels

CLEVELAND, O., Nov. 24.—British Petroleums Limited, drilling in the Wainright district of east-central Alberta, rates its No. 2 well at 100 barrels, according to a letter received from Newton W. Emmens, of Vancouver, B. C., who is the petroleum engineer for the company.

This well is located in 30-46-6w, west of the 4th meridian and six miles north of the Wainwright district.

Mr. Emmens writes:

"The oil comes from a 17-foot sand, to which the name of the head driller who first drilled into it, Credille, has been given. It lies near the base of the Benton shales and was encountered at a depth of 2018 feet. When first struck this sand did not show much signs of oil but the borings brought up by mud fluid and the occasional appearance of a 'rainbow' in the ditch showed there was some oil in the sand. A string of 8¼-inch casing was set and the hole bailed out with the result as stated above." (Production of 100 barrels.)

"The oil is of a fair grade, is dark brown in color, contains satisfactory percentages of gasoline, kerosene and lubricating oils and has an asphaltic base. There is sufficient gas with the oil to flow the well through 3-inch tubing.

"The first well of the company was a gasser from a sand below the Credille sand, which latter was quite thin and showed only traces of oil in the No. 1 hole. The gas is of good gasoline content and will be used later in conjunction with the gas from No. 2 and other wells to be drilled, for supplying the town of Wainwright, the recovery of its contained gasoline and the manufacture of carbon-black.

"It is the opinion of those qualified to judge that this well marks the opening of an important oil field in east-central Alberta, which if borne out by development—of which there will be considerable during 1924—is an event of prime importance to western Canada. The results of next season's drilling is awaited with much interest."

The British Petroleums Limited, of Canada, is controlled by British capital and holds extensive leases in Alberta. Mr. Emmens, the authority for the above quoted information, is a mining engineer, member of the American Institute of Mining & Metallurgical Engineers, who formerly was located in Huntington, W. Va.

D. O. Credille, the driller mentioned by Mr. Emmens, is a Texan, well known in California and Texas fields, whose home is in Burkburnett. Mr. Emmens remarks that Credille deserves credit for drilling one of the straightest holes he has ever tested.

## New Alamo And Casiano Wells Completed

TAMPICO, Nov. 22—Penn-Mex Fuel Co.'s No. 21 well on the Alamo hacienda, south of the Tuxpam river in the southern district, is reported increasing its flow from 2,000 barrels, initial production a month ago, to approximately 11,000 barrels at this time. It is in old territory and is important only as an individual well.

No. 10 Juan Casiano of S. G. Nelson et al, in the old Peptate-Casiano region of the Southern district, is a current completion at total depth of 2158 feet in a territory largely depleted but which gives promise of important individual well production from a "localized high" spot on the faulted-fold structure. It has been estimated as high as a 15,000-barrel well.

## Gulf Exercises Option In Venezuela

NEW YORK, Nov. 24.—Announcement has been made by John W. Weeks, chairman of the board of the Maracaibo Oil Exploration Corp., that the South American Gulf Oil Co. has selected 64,420 acres of the 100,000 contracted for with the Maracaibo in Venezuela. The other 35,000 acres will be chosen before Dec. 23 under the terms of the contract. Maracaibo retains a 10 per cent royalty in the oil to be produced.

---

## Sells Oil To Atlantic

NEW YORK, Nov. 24.—It is reported that the Sinclair Crude Oil Purchasing Co. has contracted to deliver to the Atlantic Refining Co., 10,000 barrels daily, shipments to begin Jan. 1 and total deliveries to aggregate seven million barrels. Deliveries are to be made from current purchases of oil and will be handled by water from Houston terminal of Sinclair pipe line.

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TULSA, Nov. 26.—F. W. DeWolf, of Dallas, chief geologist for the Boyd Oil Co. is in Tulsa today and will address the Technical Club of Oklahoma at its smoker tonight.

## Big Well In Wewoka And In Osage

TULSA, Nov. 27.—Producers & Refiners Corp. brought in its No. 6 Foster in the northwest of the northwest of 33-8-8, Wewoka field, Seminole county for five million feet of gas and 1500 barrels of oil in sand from 3130 to 3140 feet. Dixie Oil Co. has a disappointing showing in its No. 1 Harris in the southeast corner of the northwest of the northeast of Sec. 32, having only a small showing of oil in sand from 3131 to 3148 feet. It is now drilling at 3152 feet looking for deeper pay.

In Osage county five miles north of Third and Main streets, Tulsa, Frank A. Gillespie has a well estimated good for 3000 barrels in the northeast of 8-20-12. The Wilcox sand was topped at 2050 feet and only a short distance in the well started off at better than 100 barrels hourly of 41 gravity oil. The well is a mile west and three north of the field opened by Munn Brothers and the Riverland Oil Co. in 28-20-12, where a number of good wells have been completed.

Near Bruner Station, Tulsa county, six miles west of Tulsa, the Sand Springs Home (Charles Page interests) has a well starting off at 100 barrels a day in the Wilcox sand at about 1900 feet. It is now shut in for pipe line.

Shaffer Oil & Refining Co. has a well spraying oil and one million feet of gas in the Wilcox sand at 1916 feet in the southeast of 6-19-12.

## Sun Gets New Deep Pay In Orange Field

HOUSTON, Nov. 26.—Sun Oil Co.'s No. 2 Carrie Brown developed new deep pay production at 4557 feet after setting screen approximately 100 feet in the sand and has extended the Orange field three-quarters of a mile southeast. The well is flowing between 3000 and 3500 barrels through two chokers, one three-eighths inch and the other three-quarters. The oil tests 26 Be.

The deepest of several sands heretofore producing at Orange was around 4000 feet and water conditions common to the Gulf Coastal fields have been prevalent. It has not yet been determined whether the water being produced with the oil from the Sun's well Saturday was rotary wash water or whether it came from the sand, but it was believed to be the former.

# Transfers Of Production And Acreage In North Texas

By Special Correspondent

FORT WORTH, Nov. 23

LACKING any actual field developments of any great importance, the past week, however, saw considerable activity throughout North Texas fields of a preparatory nature. Several lease deals, not "distress" production sales as might have been expected, but of partially developed acreage in new pools, for a nice price, were reported.

In the Amarillo, or Panhandle district, there is promise of some immediate action on a pipe line plan, which will mean an outlet to Carson county production. A proposition from Panhandle, the closest town, 17 miles from the producers on the Burkburnett ranch, for a refinery bonus, to operators, has been countered with a proposition from Amarillo, where a refinery has been in operation, at intervals, for several years. Some definite action will be taken, it is understood, in a short time. Amarillo is 45 miles from the oil wells now producing, and the cost of building a pipe line this distance is a considerable item in the plans of operators. Potential production of the Burkburnett wells, owned by the Texas, Gulf, and Silk, Bullington and Clark, is said to be now in excess of 1000 barrels. Two producing sands, both below 3000 feet, have already been established. An outlet for the oil would mean much new activity when the condition of the market improves, and some increased activity even under present conditions. The Panhandle district will be primarily a "big" company field, but there are enough Independents already in with acreage, to prevent it from being so too literally. Independents, Silk, Bullington and Clark, were among the pioneers in Carson county, and these are planning to continue activity.

The biggest wildcat deal of weeks was made public this week, with announcement of the plans of the Texas-Pacific Coal & Oil Co. to drill three or more tests in Reagan county immediately. The T. & P. company has acquired 50 sections of land in the general vicinity of the Texon Land and Development Co's. discovery well in Reagan county, and will start the first well in 30 to 40 days' time. This is the second large deal in a few weeks' time involving this west Texas wildcat section, brought to notice last spring when the Texon well was completed. Benedum and Trees, as previously announced, bought a large amount of the Texon leases, including the discovery well, and undertook a development program. The Big Lake Oil Co. will be the developing subsidiary of Benedum and Trees for this work.

A part of the acreage taken over by the Benedum-Trees interests has already been resold to the Mid-Kansas, it is understood, and the latter company will probably share in the development program.

The Empire Gas & Fuel Co. entered the north Archer county field this week, with the purchase of the Verschoyle 50 acres on the Wilmont with one producer. The price was reported to be $155,000. Other drilling has been started.

A second lease, of 95 acres on the Luke Wilson, brought $150,000 this week. C. H. Clark et al. bought the latter property from J. V. Henley. Two wells are on the lease.

A third gave T. O. Shappell a half interest in the Treasher and Stidham wildcat, on the Daume, south of Iowa Park. The Daume well made a small pumper in the 1800-foot sand. Other wells will be drilled. The deal involved $30,000.

Drilling and completions reports this week show a slight increase in activity. Several counties that have been without new producers for weeks show completions, though none are of any particular importance, either as to size or location.

The new North Clara pool, and the Hirschi, in North Wichita county furnished several new wells, though none of more than a location or two extension. The same was true of Archer county. Stephens county's new wells were all inside locations.

**Daily Estimated Production of Texas Fields**

| | Nov. 24 | Nov. 17 |
|---|---|---|
| Mexia-Currie .... | 44,350 | 44,150 |
| Corsicana-Powell . | 265,000 | 285,000 |
| Wichita Falls Dist | 66,290 | 63,150 |
| Ranger, lime ..... | 35,995 | 37,115 |
| Ranger, sand, inc. Young and Shackleford cos. | 11,045 | 10,950 |
| San Antonio, Luling and Mirando | 16,300 | 17,800 |
| Coastal Texas .... | 81,395 | 84,845 |
| Coastal Louisiana | 7,290 | 7,215 |
| | 527,665 | 550,225 |

TULSA, Nov. 24.—Dale Johnson, president, and William Quinlan, secretary and treasurer of the Tri-City Oil Co., Rock Island, Ill., were visitors in Tulsa this week with officials of the Omar Refining Co. They visited the Garber field and refinery and contracted for gasoline and kerosene for 1924 while here.

## North And North Central Texas Completions, Week Ending November 24

**WICHITA FALLS DISTRICT**

**Wichita County**

| Company | Well No. | Lease | Depth | Production |
|---|---|---|---|---|
| Gulf Production Co | 13 | Hirschi | 1880 | 600 |
| Barkley & Meadows | 23 | Hirschi | 1875 | 150 |
| The Bradley Co | 17 | Hirschi | 1880 | 250 |
| John O'Neil | 3 | Saunders Estate | 1840 | 150 |
| McDabb Oil Co | 2 | Saunders Estate | 1870 | junked |
| Mangolia Petroleum | 26 | Rio Bravo | 1580 | 100 |
| Texhoma Oil & Refining | 2 | Burnett et al | 900 | 40 |
| Stidham & Threasher | 2 | Dame | 1830 | 40 |

**Archer County**

| | | | | |
|---|---|---|---|---|
| Jetter et al | 1 | Wilson | 1590 | 150 |
| Sixty Six Oil Co | 3 | Wilson | 1580 | 325 |
| Chenault, Lea & Johnson | 4 | Wilson | 1590 | 40 |
| Staley & Wynne | 3 | Mrs. J. H. Carter | 1580 | 40 |
| Empire Gas & Fuel | 1 | Wilson | 1620 | 50 |
| Stone et al | 1 | Wilson | 1650 | Aband. |

**Young County**

| | | | | |
|---|---|---|---|---|
| Bullington et al | 1 | Hankins | 1310 | Aband. |
| Mexia Star Oil Co | 1 | Carter | 500 | temp. aband. |

**GENERAL RANGER TERRITORY**

**Stephens County**

| | | | | |
|---|---|---|---|---|
| Scott & Bateman | 1 | Davis | 3280 | 300 |
| Humble Oil & Ref | 11 | Caton | 3200 | 1,000 |
| Fred B. Foster et al | 3-C | Shipley | 3170 | 400 |

**Eastland County**

| | | | | |
|---|---|---|---|---|
| Magnolia Petroleum | 3 | Rose | 2830 | 35 |
| Gholson et al | 2 | Shugart | 2870 | 40 |

| Company | Well No. | Lease | Depth | Production |
|---|---|---|---|---|
| Kokomo Petroleum Co | 1 | Harris | 3240 | Aband. |
| Humble Oil & Refining | 3 | Merrill | 1230 | 75 |
| Knight et al | 3 | J. S. Underwood | 2520 | 50 |

**Palo Pinto County**

| | | | | |
|---|---|---|---|---|
| Ligon & Shepherd | 1 | Carter | 3500 | Aband. |
| Cunningham et al | 1 | Poer | 4220 | Aband. |

**Mitchell County**

| | | | | |
|---|---|---|---|---|
| Henry Riley et al | 1 | E. Morrison | 3045 | 75 |

**Tom Green County**

| | | | | |
|---|---|---|---|---|
| W. O. Kimmille et al | 1 | Lee Knight | 480 | Aband. |
| W. O. Kimmille et al | 1 | Jameyson Bros | 610 | Aband. |

**Culberson County**

| | | | | |
|---|---|---|---|---|
| David Flood et al | 1 | McAlpin & Grisham | 3700 | Aband. |

**POWELL COMPLETIONS**

**Navarro County**

| | | | | |
|---|---|---|---|---|
| Dick Webster | 1 | Boyd | 2985 | 1,500 |
| Humble Oil & Refining | 7 | Crews | 2970 | 900 |
| Humble Oil & Refining | 18 | Humphreys | 2965 | 2,000 |
| Humble Oil & Refining | 4 | E. L. Kent | 2985 | 700 |
| Humble Oil & Refining | 13 | Davis | 2970 | 300 |
| Humble Oil & Refining | 8 | Davis | 2970 | 2,500 |
| Atlantic Producing Oil Co | 7 | Kellum | 2950 | 3,500 |
| Empire Gas & Fuel | 2 | Sweatman | 3000 | salt water |
| Simms Oil Co | 1 | J. A. Boyd | 2990 | 250 |
| Barkley & Meadows | 1 | Cerf | 2980 | 2,400 |
| Tidal Oil Co | 3 | Crews | 2980 | 4,500 |
| Gulf Production Co | 9 | Crews | 2980 | 5,000 |
| Gulf Production Co | 10 | Crews | 2980 | 3,000 |

# Not Much New In Production, Except That There Is Demand For It

**By A. F. Hinton**
STAFF REPRESENTATIVE

TULSA, Nov. 24.

NOT much interesting production news have developed during the past week, but there has been so much else doing every minute that there was plenty to talk about, and the lack of sensational new wells or mournful new dry holes was not regretted. It would have taken some record-breaking wells to have caused attention to shift from the important fact that proration had ended and that a sudden search for oil had taken its place overnight, while if that failed momentarily as a topic conversation and argument, there was also the story of a merger of Cosden with Prairie that was being discussed from every angle.

### Purchasers After New Connections

Producers awoke to the realization early this week that oil was being eagerly sought by all the principal buyers, and they were being besieged with offers almost before they knew that all their production would be run under the new order of things. It didn't take long after the Prairie cut the price for them and other companies to decide that there was something too good to pass up, and they all started out to get all of it they could while the price was down. The "Oil Wanted" sign predicted in this column last week is out in earnest now, and is prominently displayed by every principal purchaser.

### Premiums Being Talked Again

And already there is talk of premiums being offered here and there for high gravity oil, notably in the Burbank and Tonkawa fields. Where all this will lead to there is no telling now, but it looks as if a repetition of last winter's experiences is in prospect, and that higher crude prices are to be expected along about January 1.

A year ago at this time, the Mid-Continent was scratching its head and mumbling over the Prairie's newly-announced gravity schedule, with eight grades running from 90 cents to $1.80. Before it had memorized the table entirely, the Prairie started changing it every week from Jan. 13 on, and boosted the price six successive times by Feb. 17. The premiums which were being paid by Independent refiners, followed by the Prairie's recurring raises, resulted in a drilling campaign that reached its full growth by mid-summer, when Oklahoma went over the top with a production of 530,000 barrels a day.

The Prairie saw that coming, too, and also was confronted with the realization that California crude was usurping its place in the sun along the Atlantic coast, whereupon it started cutting the price in April, and prorated runs in June. Now here we are again; production is away off in the Mid-Continent, and only a small proportion of the state's output is selling for more than one dollar a barrel. The big purchasing companies will store oil as long as they can keep the price where it is now. In the meantime, the Independent refiner will be forced to offer premiums, as he is always forced to do if he wants crude when the big fellows are also in the market for it.

We understand that it is believed in the upper circles of the industry that Powell will be down to less than 100,000 barrels a day by next April, or sooner, and that California has shot its bolt for the time being, Torrance being given scant consideration as possible menace to the Mid-Continent crude price. Oklahoma's production is off about 150,000 barrels a day from its peak. The question is, then: when will it be necessary to replace this 150,000 barrels a day, and how long will it take to do it? On the price-making companies' opinion on this subject rests the decision as to how long Oklahoma crude will be selling at a dollar a barrel.

It looks now very much as if Mid-Continent crude will be on its way upward along about Jan. 1. It will be necessary by that time to stimulate drilling to start the campaign to bring back Oklahoma's missing 150,000 barrels a day, so that it will be on hand by midsummer, when in all probability every barrel of it will be in demand. Always provided, of course, that California does not break loose again. In making such statements as this from now on, it will always be necessary to use at least one "if," for Cal-if-fornia surely has left its mark on the Mid-Continent mind, and nothing that state should do could cause us any surprises.

The best way, of course, to help along the good cause, and to make more certain an early increase in the posted price, is to jog along as at present, doing absolutely no more drilling than necessary and doing nothing toward the creation of another overproduction. And another thing, now is the time, if ever, to hold onto stored oil as long as possible, and to add to it wherever possible. As long as all production can be sold, even at $1.00 a barrel, producers probably can get by in fair shape until spring, and by that time it is an excellent bet that every barrel of stored oil will be worth more than it is now.

### Current Production

After showing a considerable increase last week, Oklahoma's production practically stood still during the week just closed. The state's output now is estimated at 386,363 barrels daily, as compared with 386,821 barrels last week,

**Daily Average Production Oklahoma and Kansas Estimated**

| Oklahoma | Nov. 24 | Nov. 17 |
|---|---|---|
| Bristow | 49,500 | 48,600 |
| Burbank | 86,444 | 88,189 |
| Cushing | 24,600 | 24,000 |
| Healdton | 16,875 | 16,375 |
| Hewitt | 21,500 | 21,200 |
| Tonkawa | 47,592 | 47,274 |
| Osage, except Burbank | 26,400 | 26,500 |
| Wewoka | 17,972 | 18,683 |
| Oklahoma, general | 95,480 | 96,000 |
| Total | 386,363 | 386,821 |
| Decrease | | 458 |

| Kansas | | |
|---|---|---|
| Augusta-Douglass | 3,510 | 3,535 |
| Blankenship Dist | 2,355 | 2,370 |
| Elbing-Peabody | 7,940 | 8,000 |
| Eldorado | 17,500 | 17,375 |
| Florence District | 2,800 | 2,850 |
| Fox-Bush | 5,200 | 5,300 |
| Greenwood County | 16,300 | 16,300 |
| Leon & Weaver | 1,000 | 1,000 |
| Kansas, general | 11,300 | 11,500 |
| Total | 67,905 | 68,230 |
| Decrease | | 325 |

a decrease of only 458 barrels. Wewoka, with no new wells added during the week, declined 711 barrels to 17,973 barrels. Burbank also had no new wells to report, and declined from 88,189 to 86 444 barrels. Tonkawa had eight completions during the week, but increased its production only 318 barrels, to 47,592. Bristow, Cushing, Healdton, and Hewitt showed small increases during the week.

Now that runs are back on a 100 per cent basis. it is probable that all the fields in Oklahoma and Kansas will soon begin to increase their production, and the first effects of this should begin to be reflected in next week's reports. Even without the stimulus of additional drilling. many of the old fields will show more or less of a come-back when the wells are pumped to capacity again. In fields such as Burbank, where 111 wells are shut down on top of the sand and ready to drill in as soon as conditions warrant, a very great increase in production awaits only the resumption of drilling. Tonkawa will never come back unless the 3200-foot sand proves productive, and this deep horizon probably will be tested out thoroughly in the near future.

### Wells Completed

Only 44 wells were completed in Oklahoma during the week just closed, of which 23 were oil wells, nine were gas wells. and 12 were dry holes. This is a decrease from last week, when there were 57 completions, divided 30 oil wells, nine gas wells, and 18 dry holes.

The 23 wells completed this week were of unusually good size, bringing in 11,458 barrels of new production, an average of about 498 barrels per well. Last week 30 oil wells had a total initial production 8,329 barrels, with a per well average of 277.6 barrels.

Completions reported from Kansas this week numbered only four, and all of them were dry holes. Last week only one completion was reported from the Sunflower state, but it was an oil well. This week's record is a total loss so far as reporting new production is concerned.

### Drilling Operations

Out of 1,292 field operations under way in the state, there are 62 locations, 219 rigs, 518 drilling and 493 shut down. These compare with last week's total of 1 298 operations, divided 66 locations, 224 rigs, 495 drilling and 513 shut down. Figures showing field operations in the various districts of Oklahoma, Kansas, and North Texas are given in the accompanying table.

### Wewoka Developments

The most important event of the week at Wewoka was the finding of water underneath the Smith sand. and the probable cutting off of the field's productive area to the northeast. The important test of Davis, Sloan & Crosbie No. 1 Foster, in the C NW¼, NE¼, SW¼ of 28-8-8, about a half-mile north and east of production, went into water at 3260 feet after having showed for about a 50-barrel well in the regular sand from 3172 to 3214 feet. It made three small flows at this depth. After having been drilled five feet into the water sand, it was shut down, and looks very much like a failure. Some of the property acquired by the Dixie Oil Co. from R. H. Smith lies northeast of this well, and does not look very good now. The Crosbie well is being plugged back to the oil sand.

Southwest of the Wewoka field, in 23-7-7, the Oklahoma Co., (R. H. Smith interests) have 10 million feet of gas at 2495 feet, and indications are that another pool may be opened in this vicinity. This well got the gas sand several months ago, but has been held up with a collapsed casing fishing job. When the hole was cleaned out a few days ago to resume drilling, the gas pressure was great enough to blow the tools out, but did no damage to the rig. The gas is now being bradenheaded, and the well will be drilled on down.

Western Kansas was again in the spotlight of publicity during the week, following reports of an oil showing in a wildcat many miles from production, in Russell county, which adjoins Barton county on the north. This well is the M. M. Valerius Oil & Gas Co., No. 1 Oswald, in the SE¼, SW¼ of 8-12-15W. Latest reports are to the effect that it had a showing for a 10-barrel well in sandy lime from 2795 to 2802 feet, and was drilling in rotten lime formation at 2860 feet. The oil is of 28 degrees gravity. Owing to the low gravity of the oil and the fact that it was found in lime formation, the well has not so far attracted more than passing interest. The M. M. Valerius Co. is a subsidiary of the H. F. Wilcox Oil & Gas Co. M. M. Valerius is a well-known Tulsa geologist who has been prominently identified with Kansas operations for some time.

## Completions Oklahoma And Kansas Week Ending November 24, 1923

### OKLAHOMA

#### Carter County

| Company | Well No. | Location | Depth | Initial Production |
|---|---|---|---|---|
| Southwestern Pet. Co | 4 | NE SE 25-2S-3W | 2380–2448 | 1200 |
| Atlantic Oil Prod. Co | 2 | NW NE 25-2S-3W | 1970–2008 | 25M |
| Baker & Strawn | 4 | NE NW 22-4S-2W | 2034–2070 | 30 |

#### Creek County

| | | | | |
|---|---|---|---|---|
| Bu-Vi-Bar Oil Co | 1 | NEc SW 19-17-9 | 2641–2671 | 11M |
| Pure Oil | 2 | NW NE 17-15-8 | 3742–3796 | 1680 |
| Pure Oil | 6 | SW NE 17-15-8 | 3705–3765 | 1075 |
| Shaffer Oil & Ref | 1 | NWc NE 17-17-11 | 2572–2587 | 15 |
| McClung et al | 1 | NE SE 28-17-11 | 1788–1810 | 10 |
| Amerada Pet. Co | 1 | SE NW 2-16-9 | T.D.3405 | Dry |

#### Hughes County

| | | | | |
|---|---|---|---|---|
| Prod. & Ref | 1 | SW NE 14-7-8 | 1007–1012 | 1½M |

#### McIntosh County

| | | | | |
|---|---|---|---|---|
| J. E. Weible | 1 | NE SW 16-12-17 | T.D.2341 | Dry |

#### Muskogee County

| | | | | |
|---|---|---|---|---|
| Gilliland Oil | 1 | NE NE 6-15-15 | 1295–1307 | 100 |
| Biggs & Evans | 2 | SW SW 14-13-15 | T.D.2812 | Dry |
| Roxaline Oil Co | 4 | SW SE 24-14-16 | T.D.2458 | Dry |
| Blythsville Oil Co | 1 | SE SE 20-14-19 | T.D.1200 | Dry |

#### Noble County

| | | | | |
|---|---|---|---|---|
| Gypsy Oil | 75 | C NW 2-24-1W | 2092–2096 | 400 |
| Comar Oil | 16 | N½ SW 2-24-1W | 2511–2595 | 528 |
| Comar Oil | 20 | W½ SW 2-24-1W | 2550–2604 | 297 |
| Comar Oil | 16 | N½ NE 2-24-1W | 1828–1850 | 75 |
| Comar Oil | 19B | SE NE 3-24-1W | 1899–1904 | 10 |
| Twin States Oil | 1 | NE NW 29-21-1W | 1817–3210 | 15 |
| Healdton O. & G | 1 | SE SE 2-24-1W | T.D.2692 | Dry |
| Magnolia Pet | 1 | NE SW 16-21-1W | T.D.3330 | Dry |

#### Okfuskee County

| | | | | |
|---|---|---|---|---|
| Gardner Oil Co | 1 | SWc 26-11-8 | T.D.4035 | Dry |

#### Okmulgee County

| | | | | |
|---|---|---|---|---|
| E. R. Black et al | 1 | NE SE 5-11-12 | 2578–2580 | 2½M |
| Margay Oil Corp | 1 | NW NE 27-16-12 | T.D.2882 | Dry |

#### Osage—Burbank

| Company | Well No. | Location | Depth | Initial Production |
|---|---|---|---|---|
| Gypsy Oil | 5 | SE NE 23-27-5 | 2953–2988 | 500 |
| Phillips-Skelly | 4 | NWc NW 25-27-5 | 2940–2988 | 200 |
| Littrel, et al | 1 | SW NE 21-24-9 | 2171–2240 | 10 |
| Fluins Petr. Co | 2 | SEc NW 32-24-9 | 2135–2185 | 15 |
| Owen-Osage Co | 254 | SE NE 34-24-11 | 1758–1788 | ¾M |
| Owen-Osage Oil | 251 | N½ SW 9-22-11 | T.D.1960 | Dry |
| Owen-Osage | 246 | NW SE 17-29-12 | T.D.1609 | Dry |
| Owen-Osage | 245 | N½ NW 29-29-12 | T.D.2143 | Dry |

#### Pawnee County

| | | | | |
|---|---|---|---|---|
| J. B. Grieves | 4 | NWc 31-21-6 | 2600–2601 | 40 |

#### Payne County

| | | | | |
|---|---|---|---|---|
| Hughes & Jones | 1 | SE SE 31-18-4 | 2162–2170 | 8M |

#### Pontotoc County

| | | | | |
|---|---|---|---|---|
| Amer. O. & Ref | 1 | SW NW 16-4N-6E | 1317–1319 | 20M |

#### Seminole County

| | | | | |
|---|---|---|---|---|
| Dixie Oil | 2 | SE NE 32-8-8 | 3115–3119 | 873 |
| Dixie Oil | 2 | SW NW 33-8-8 | 3143–3154 | 2100 |
| Prod. & Ref | 5 | NWc 33-8-8 | 3130–3146 | 2200 |

#### Stephens County

| | | | | |
|---|---|---|---|---|
| Magnolia Pet | 6 | NE NW 25-1S-9W | 2030–2040 | 2M |

#### Tillman County

| | | | | |
|---|---|---|---|---|
| Revenue Oil Co | 2 | NW NW 8-5S-14W | 1520–1526 | 50 |

#### Tulsa County

| | | | | |
|---|---|---|---|---|
| S. S. Home | 1 | SE NW 6-19-12 | 1767–1774 | 5M |
| Pennington et al | 1 | NE NE 33-19-14 | 1326–1367 | 10 |

### KANSAS

#### Cowley County

| | | | | |
|---|---|---|---|---|
| C. E. Roth et al | 1 | NW SE 4-30-8 | T.D.2910 | Dry |

#### Greenwood County

| | | | | |
|---|---|---|---|---|
| Hutton-Reagon | 1 | SWc 13-24-11 | T.D.2376 | Dry |
| Theta Oil Co | 7 | SE SW 8-23-13 | T.D.1832 | Dry |

#### Sumner County

| | | | | |
|---|---|---|---|---|
| Spencer et al | 1 | NWc 34-33-2 | T.D.3790 | Dry |

## Drilling Operations, Oklahoma, Kansas and North Texas, November 17-24, 1923

| | Nov. 17 Week Ending | | | | | Nov. 24 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Oklahoma** | **Loc.** | **Rigs** | **Drg.** | **S.D.** | **Total** | **Loc.** | **Rigs** | **Drg.** | **S.D.** | **Total** |
| Burbank | 12 | 28 | 4 | 113 | 157 | 11 | 27 | 7 | 111 | 156 |
| Other Osage | 10 | 12 | 28 | 32 | 82 | 10 | 12 | 31 | 32 | 85 |
| Bristow | 3 | 19 | 32 | 28 | 82 | 2 | 16 | 36 | 27 | 81 |
| Cushing | 10 | 12 | 50 | 34 | 106 | 9 | 14 | 50 | 31 | 104 |
| North Okla | 6 | 14 | 43 | 40 | 103 | 7 | 11 | 51 | 35 | 104 |
| South Okla | 4 | 29 | 162 | 134 | 329 | 6 | 34 | 172 | 124 | 336 |
| Muskogee | 0 | 6 | 23 | 38 | 67 | 0 | 5 | 19 | 38 | 62 |
| Okmulgee | 3 | 50 | 40 | 44 | 137 | 3 | 48 | 39 | 48 | 138 |
| Tonkawa | 3 | 33 | 41 | 24 | 101 | 2 | 33 | 38 | 23 | 96 |
| Weleetka | 15 | 21 | 72 | 26 | 134 | 12 | 19 | 75 | 24 | 130 |
| Total Okla | 66 | 224 | 495 | 513 | 1,298 | 62 | 219 | 518 | 493 | 1,292 |
| Kansas | 36 | 54 | 55 | 85 | 230 | 31 | 55 | 50 | 85 | 221 |
| **North Texas** | | | | | | | | | | |
| Eastland Co | 0 | 7 | 21 | 14 | 42 | 0 | 7 | 19 | 14 | 40 |
| Stephens Co | 0 | 20 | 15 | 44 | 79 | 0 | 19 | 18 | 42 | 79 |
| Mexia (Powell) | 0 | 12 | 171 | 14 | 197 | 0 | 31 | 113 | 13 | 157 |
| E. Tex. Wildcats | 0 | 11 | 30 | 50 | 91 | 0 | 11 | 30 | 50 | 91 |
| W. Tex. Wildcats | 0 | 30 | 79 | 135 | 244 | 0 | 38 | 79 | 140 | 257 |
| Total N. Texas | 0 | 80 | 316 | 257 | 653 | 0 | 106 | 259 | 259 | 624 |
| Grand Total | 102 | 358 | 866 | 855 | 2,181 | 93 | 380 | 827 | 837 | 2,137 |

# Think Salt Creek Potential Will Be About 120,000 Barrels

By Special Correspondent

CASPER, Nov. 24

FIVE of the six zones into which the Salt Creek field was divided have been tested and the result as estimated now bears out in general the estimate for the field published in these columns at the conclusion of the first zone test. The field is now estimated to show a general decline of about 30 per cent from the potential developed production of 171,000 barrels revealed by the test last summer.

Thus, while the test will not be completed until the end of this month, it is now believed the potential developed production of Salt Creek will be shown to be around 120,000 barrels daily.

Further information is now available on the deep test drilled by the Producers & Refiners Corp. in Sec. 6 previously referred to in these columns. The total depth of the well was 3625 feet and passed through the Dakota and Lakota formations and the Sundance, finding all three failures. The first Wall Creek carried water as is its normal condition in this part of the field; the second Wall Creek produced gas and oil, as was expected. The Dakota was a sandy shale formation and the Lakota was water bearing. The Sundance contained water with a temperature of 145 degrees F. and a trace of nickel.

Not much that is new in the way of oil is being developed in the Rocky Mountain territory but every little while more gas territory is uncovered. This is generally poor reward for wildcatting, for the market for gas has its definite limits and such limits are vastly exceeded in present developed supply. The latest gas strike in Wyoming is on what is known as the Eight-Mile structure, which is some 11 miles southwest of Rawlins. The Hatfield Oil Co. drilling in 2-19-88 found the top of a sand at 3950 feet and at four feet in flow was estimated at 16,500,000 feet. The well has been shut in. The producing formation is thought to be the Dakota. This company is financed largely by Rawlins interests and another test will be started lower on structure to see whether there is any oil.

The big sensation of recent days, of course, is the well in northern Colorado and this continues to hold the attention. The Union Oil Co. of California, which is not a subsidiary of the Shell, as some publications have stated it, now estimated the flow at 80 million feet daily.

Some encouragement is seen in the reported later discoloration of the gas flowing through 8¼-inch. Derrick was somewhat blackened when it was removed and further testing may show oil on this structure. The test is on what is known as the Wellington dome, in 31-10-68, Larimer county, and is 14 miles north of Fort Collins. Whether this territory develops oil or not, the gas is in reach of several towns of fair size and can be profitably piped to domestic consumers. It is probable that the next test to be started by the company will be on another structure, about 2½ miles north of Fort Collins.

The test has been visited by thousands of northern Colorado people and automobiles have jammed the roads near Fort Collins. The state advertised for sale 1640 acres on Nov. 23 in Denver. Most of this is some distance from the well but the state apparently thought the time to get the money was while excitement was high.

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CASPER, Nov. 24.—Average daily pipe line runs from the various fields in the Rocky Mountain region for the week ended Nov. 24, showed a decrease of 4625 barrels. Comparative average daily runs for the week ended Nov. 24, and Nov. 17 follow:

| Fields | Nov. 24 | Nov. 17 |
|---|---|---|
| Salt Creek | 123,000 | 130,000 |
| Teapot | 4,700 | 4,750 |
| Big Muddy | 4,375 | 3,050 |
| Grass Creek | 3,025 | 3,035 |
| Elk Basin | 1,710 | 1,690 |
| Notches | 130 | 95 |
| Greybull, etc. | 165 | 145 |
| Rock River | 3,485 | 3,400 |
| Lance Creek | 1,790 | 480 |
| Poison Spider | 650 | 610 |
| Osage | 625 | 675 |
| Hamilton Dome | 425 | 530 |
| Lander | 320 | 325 |
| Pilot Butte | 85 | 80 |
| Lost Soldier | 4,845 | 4,835 |
| Ferris | 110 | 100 |
| Cat Creek | 4,575 | 4,658 |
| Kevin-Sunburst | 860 | 965 |
| Miscellaneous | 600 | 620 |
| Totals | 155,475 | 160,100 |

## Cabin Creek Refinery Manager Dies

CHARLESTON, W. VA., Nov. 24—John J. Rheil, general manager of the Pure Oil Co.'s refinery at Cabin Creek and a veteran employe of the company, died in St. Charles Hospital here Wednesday after an illness of long duration. He would have been 50 years old next Feb. 16.

Mr. Rheil started in the service of the Pure Oil Co. at Marcus Hook Dec. 15, 1903, and had therefore been in the service of the company nearly 20 years. He began with the company as the foreman of a pipe gang and was later promoted to the superintendency of the Marcus Hook refinery. When the Pure built the refinery at Cabin Creek he was transferred in 1918 to Cabin Creek and had general charge of the plant up to the time of his death.

Mr. Rheil married Miss Laura Butterfield who survives him.

## Buys Hamon Properties

ARDMORE, OKLA., Nov. 26.—At administrator's sale last Saturday disposing of the assets of the late Jake Hamon, the Altitude Petroleum Co. of Tulsa bought a 4000-gallon daily compression gasoline plant and around 100 barrels production for $100,000 subject to the approval of the court. The plant and production are in the Healdton field.

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KANSAS CITY, MO., Nov. 22.—The Williams Oil Co., Rockville, Mo., has just been organized and will distribute Texaco lubricating and refined oils in St. Clair county, according to B. E. Hannon, agent of The Texas Co. here.

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TULSA, Nov. 24.—Fred Applegate, sales manager of the Marland Refining Co., Ponca City, was in Tulsa yesterday visiting with friends in the refining industry.

# Torrance Continues Production Climb And Drilling Boom

By Special Correspondent
LOS ANGELES, Nov. 22

THE oil situation here at the present moment is a curious mixture of investigations, consolidations, evacuations, desperations and explorations.

The federal authorities are conducting a searching inquiry into the activities of certain promoters who are thought to have misused the mails in their zeal to sell units and stock.

In the several fields of the Los Angeles basin, particularly at Long Beach, it is asserted that numerous consolidations of small producing companies are being shaped up. The big fellows are said to be gobbling up the little fellows. but this procedure has not been carried quite far enough to become clearly visible to the eye.

Outpost drillers are evacuating territory in which much money has been spent in fruitless efforts to make field extensions. This is particularly true of Santa Fe Springs, and is true in a somewhat lesser degree at Long Beach. Last week the State Mining Bureau authorized three abandonments in the Springs field and two at Long Beach.

Promoters who sold units to finance their wells and failed to get oil enough to pay for them are either scrambling desperately for leases at Torrance and Compton, in the hope of making a bunch of easy money before the oil frenzy has entirely subsided, or are promoting refineries in the hope of getting rich in the gasoline business.

Explorations are being carried on in all directions from Los Angeles. The most recent ventures of this nature being by a group of prominent oil operators at Puente, and by still another group at Arcadia. The Pan-American Petroleum Co. is wildcatting near El. Segundo, close to the ocean, and the Globe Petroleum Corp. is drilling a wildcat near the shoreline between Huntington Beach and Newport Beach. Inland, the Whiston interests are wildcatting near Montebello, while the National Security Oil Co. is raising money by assessment to finish its wildcat near Orange County Park, south of Los Angeles.

Up and down oil row in this city there are persistent rumors to the effect that one of the largest producing and marketing companies in the state is secretly paying a bonus for crude, but there appears to be little foundation for the report. One promoter, whose wells declined to almost nothing, in the Santa Fe Springs field, is known to be paying a bonus of five cents for crude, in order to fill up a tank farm, hoping to retrieve a lot of money that was recklessly spent in wildcatting during the summer.

### Torrance to the Front

The Torrance field, which has about 200 wells drilling at the present time, with 15 or 20 cemented off, is gathering momentum on its upward climb toward peak of production.

During the week just closed it completed eight new producers which, conservatively estimated, are making a combined flow of about 13,100 barrels per day. This output almost doubled the field's total yield in seven days, and is a fair indication of what may be expected from Torrance by the turn of the year.

Two of the new wells belong to the Petroleum Securities Co. a subsidiary of the Pan-American Petroleum Co. They are the No. 2, doing 1800 barrels and the No. 3 doing 1750 barrels. These are yielding 26 degree gravity oil, and are located just south of the old Long Beach-Redondo boulevard, adjacent to the original Midway Northern Oil Co. No. 1 well, which was the first to yield 1000 barrels in the field. These wells round out three producers for the Doheny interests at Torrance, with seven others drilling.

**California Daily Production**

| | Nov. 24 | Nov. 17 |
|---|---|---|
| Santa Fe Spring .. | 225,000 | 230,000 |
| Long Beach ..... | 240,000 | 245,000 |
| Huntington Beach | 73,000 | 75,000 |
| Torrance ..... | 20,000 | 18,000 |
| Compton ..... | 1,375 | 1,400 |
| Rest of State ..... | 197,000 | 196,000 |
| | 756,475 | 765,400 |

The other new producers were the Cook Drilling Co.'s No. 1, east of Pennsylvania avenue, doing 2000 barrels; the George F. Getty No. 3, between the Midway Northern No. 1 and No. 2, doing 1350 barrels; the Federal Drilling Co.'s Haymen No. 1, on Cedar street, yielding 1500 barrels; the Gilmore Oil Co.'s Davison & Lowe No. 1, on First street, flowing 2500 barrels; the Superior Oil Co.'s Steinhilber No. 2, making 1200 barrels; and the Empire Drilling Co.'s Gladys No. 1, making 1500 barrels.

### Will Drill it Rapidly

Torrance has all the earmarks of being another intensively drilled field. Some of the larger operators, such as the Chanslor-Canfield Midway Oil Co., own upwards of 3000 acres in big blocks there, but a multitude of small operators got hold of half acres and acres, and they are drilling large numbers of offset wells.

Last week the State Mining Bureau issued permits for the drilling of 24 new wells in the Los Angeles basin. Twenty-three of them are to be drilled in the Torrance field, and they represent the activities of 15 different oil companies or syndicates.

Development at Huntington Beach is virtually at a standstill. Most of the wells there have gone on the pump. About one new well a week is being brought in, and it usually ranges around 300 barrels.

The Long Beach field is holding up better than Huntington Beach and Santa Fe Springs, but even it is declining steadily. Last week it completed eight new producers, and yet its daily field production dropped down 5000 barrels from the previous week's mark. The field showed a decline of approximately 17,000 barrels a day, counting new production.

Santa Fe Springs finished six new wells during the week, but continued its rapid decline and hit 230,000 barrels per day. The new wells ranged all the way from 375 to 4100 barrels in daily flow.

The turn of the curve in Los Angeles Basin oil production has caused the Union Oil Co. of California to abandon its plan to build two pipe lines a mile into the ocean at Huntington Beach and create a deep-water oil loading station off shore. Most of the flush production which was not sold shortly after it was brought out of the ground is now in storage, and tanker loading congestion at Los Angeles harbor has been so greatly relieved that the company does not consider the ocean pipe line necessary, nor practical.

According to last week's report of the state oil and gas supervisor, 32 new wells were started in California. This compares with 17 new ones started during the previous week. The total number of new wells for the year is 1267, against 1277 for the same date last year.

## Foreign Report Summary

WASHINGTON, Nov. 22.—After a lapse of nearly a year indications of petroleum at Innyaminga, near Beira, Portuguese East Africa, are about to be investigated. A company entitled the Innyaminga Petroleum Ltd. is being organized, registered in Salisbury, Rhodesia and will have a capital equal to $29,000,000 divided into shares of one pound each.

The company is acquiring the coal and oil prospecting rights over 42,000 square miles of territory which is held bp the Manica Trading Co. The seepages lie on the Trans-Zambezia railway and are very accessible if they prove to be what reports indicate says V. S. Consul Cecil M. P. Cross, of Lourenco Marques.

# Exploratory Areas In North Louisiana Give Promise For 1924

**By Paul Wagner**

STAFF REPRESENTATIVE

SHREVEPORT, Nov. 29

TWO wildcat areas in North Louisiana are claiming certain exploratory attention without giving promise of immediately important results. Both, however, give promise of indicating something of their worth before the year 1924 shall have ended.

These two areas are located, respectively, north of Farmerville, in the northern part of Union parish, midway between the El Dorado, Ark., oil pool and the Ouachita (Monroe) gas field; and in the western part of Webster parish, near the town of Cotton Valley.

A test showing about 15 barrels of oil, along with salt water, has pointed the way toward further prospecting in the Union parish region. The presence of brine and the lack of appreciable quantities of gas in this and preceding tests has given rise to the assumption that possibly it is on the edge of a structure yet to be defined, a condition attendant upon the drilling of the original well in Haynesville oil field of Claiborne parish, to the westward.

In Webster parish, which several years ago earned the sobriquet of "the battleground of the wildcatters", certain sub-surface conditions have been measured in connection with the completion of numerous gas wells that lead to the conclusion that somewhere in the central western part of this geographical sub-division of the state of Louisiana oil production may be picked up.

### Prospecting North of Farmerville

Prospecting dates back to 1920 in northern Union parish midway between the Ouachita gas field and the El Dorado, Ark., oil pool. There a number of tests were drilled north of the town tof Farmerville, 14 miles from which the Clark et al and Davidson-Palmer tests have more recently shown small quantities of oil.

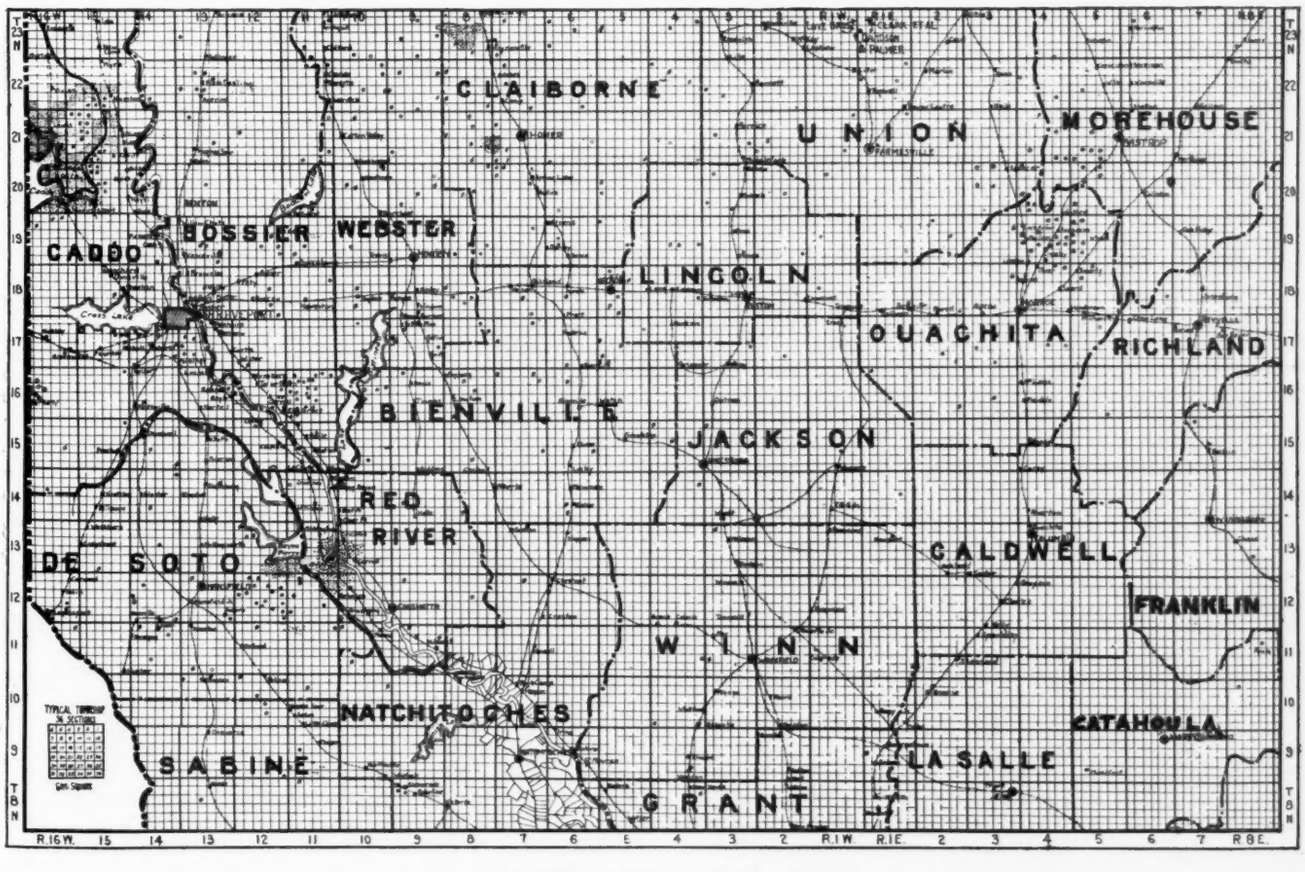
The first Clark test, drilled by the Homer-El Dorado Oil Co., was located 425 feet south and 240 feet east of the northwest corner of the southeast of the northwest of 17-23N-1E, about two and a half miles southwest of a crossroads settlement called Oakland.

Oil showings were found in the first Clark test at 2065-2170 feet, but 6-inch casing was not set until a depth of approximately 2300 feet had been reached. Other showings were encountered at 2306-2327 feet and an oil bearing sand at 2500-2556 feet. A flow of hot salt water was made at 2560 feet and No. 1 was abandoned, August 11, 1921, after drilling unsuccessfully to total depth of 2810 feet.

About 105 feet north of No. 1, the second test is further described as being 330 feet south and 240 feet east of the northwest corner of the southeast of the northwest of 17-23N-1E.

Begun in March of the present year, this second test logged "gas rock" at 997-1025, 1052-1059, 1061-1066 feet and oil sand at 10-66-1070, 21-94-2204 and 2248-2256 feet. At the latter level, which represents total depth of the hole, a showing for about a third of a barrel of oil daily, accompanied by salt water, was encountered.

Reorganizing under the name of the Union Parish Drilling Syndicate, the owners started a third test after abandoning No. 2. This test, in the northwest corner of the northeast of the northwest of the same section encountered gas showings at 970-980 and 1069-




**Genéral Map Of North Louisiana**

1071 feet. A small showing of oil and gas was reported under a thin shell of cap-rock around 1800 feet and drilling proceeded to 2154 feet, where 6-inch casing was set. The test has not been completed.

### Davidson-Palmer Operations

Meantime, Davidson & Palmer had made location and were drilling a first test on the Frost-Johnson Lumber Co. tract, in the southeast corner of the northeast of the southwest of 18-23N-1E, more than a half mile southwest of the No. 2 Clark test.

The Palmer & Davidson test got a showing in sand topped at 2188 feet and drilled to total depth of 2211 feet where oil and salt water stood in the hole. The test has been rated good for about 15 barrels, daily, oil production and is important for its bearing upon future prospecting rather than as a producing well.

A second location that will further test the possibilities of this area has been made on the Green lease, in the southwest corner of the southeast of the northeast of 19-23N-1E. This is approximately three-quarters of a mile southeast of the earlier test.

The Palmer & Davidson first test drilling records indicated a structural rise in formations in a southwesterly direction from the second Clark test. It is not impossible that the edge of a structure is indicated by the presence of salt water in the tests enumerated and the lack of appreciable quantities of gas at this level.

### Webster Parish Wells Make Gas

The Cotton Valley area, in the western part of the north half of Webster parish, has come in for important leasing interest since the completion of gas wells in township 21N-10W; the latest being that of the Fortuna Oil Co., subsidiary of the Magnolia Petroleum Co., with initial production of 42 million cubic feet daily.

Fortuna Oil Co's. well, on the Merritt tract, in Sec. 14, came in shortly after the Oil Fields Gas Co. (Alfred Glassell et al.) had completed a 35-million cubic foot gasser in the northwest corner of the same section. Total depth of the Oil Fields Gas Co. well is 2523 feet, the equivalent level of the Fortuna completion. Both were preceded by the "discovery" gas well of Webb et al, approximately a half mile east and south in Sec. 13.

The Webb et al well produced only dry gas, but the two later completions both sprayed oil in small quantities. These wells all get the gas sand 100 to 150 feet higher than did the wells on the Shongaloo-Spring Hill-Sarepta structures, north and northeast of the Cotton Valley prospect. All are in Webster parish.

Soon after the latest of the three Cotton Valley gassers had been completed, the Humble Oil & Refining Co., of Houston, took over 2160 acres in 21N-10W, the consideration being said to include an over-riding royalty in addition to a cash bonus and additional consideration to be paid out of oil produced.

The Sarepta-Spring Hill area, which lies about 50 miles northeast of Shreveport, was described by Gerald M. Ponton and John W. Whitehurst at the Shreveport meeting of the American Association of Petroleum Geologists as embracing two closely allied folds, that surrounding the so-called Munn well on the east and that at the Lloyd Harris operation on the west. The Munn well is in 1-22N-10W and the first Lloyd Harris well in 34-22N-11W.

The western fold was traced into Bossier parish to the west and Messrs. Ponton and Whitehurst declared it not unreasonable to suppose that it may be extended into Arkansas on the north. The area covered by this discussion was described as the greater portions of Townships 22 and 23N, Ranges 9, 10, 11 and 12W.

### Faulting Generally Conceded

Lying to the south, the Cotton Valley gas field was arbitrarily separated from the Spring Hill-Sarepta development by the south line of township 22, but it was described as clearly marked off by a more or less well-defined fault. This fault has certain surface indications toward Homer, they pointed out; and with the completion of the Fish Trap well in 7-21N-9W, and later with the completion by Dr. Webb of a 30 million cubic foot gasser in 13-21N-10W, in which the Blossom sand was found 125 feet higher than in the Munn well, the existence of the fault has been generally conceded.

Without going into detail, Messrs. Ponton and Whitehurst said that, in their opinion, all gas and oil enrichment in this entire area is due to faulted conditions; but owing to the loose and soft nature of the formations and the variations in sand deposition the enrichment has been erratic.

About 35 wells had been drilled in the gas area of Webster parish prior to the Cotton Valley "discovery", all producing from the equivalent horizon of the Haynesville oil production, which has been identified as the Blossom sand.

The top of the producing sand is described as quite unreliable for plotting sub-surface contours, as it has been proved in the three Lloyd Harris wells in the northwestern part of the parish that the top of the sand shows as much as 18 feet vertical difference in 1000 feet horizontally, though a hard rock parting is found at the same level. In these three wells, it apparently separates the gas from the oil sand.

### Two Wells Show For Oil

The Nos. 3 and 4 Lloyd Harris showed small quantities of oil, approximately 250 and 50 barrels, daily, respectively, but neither developing satisfactory and consistent production.

The sand deposition above the parting in the aforementioned Harris wells is described as also very erratic in nature in different parts of the field changing from solid sand to streaks of sand and shale, and, in places, to pure shale.

Below the parting in the western fold, in every case where tests have been made and where cores were taken, the sand is described as appearing to be solid, and, except in case of wells off the structure, the cores have dripped oil.

## Hope Company Is Still After Deep Gas

PARKERSBURG, W. VA., Nov. 24.—The deep test of the Hope Natural Gas Co. on the Power Oil Co. lease near the Wood-Ritchie county line, is drilling below 5260 feet. This test is planned for 7,000 feet in the hope of finding new gas sand. The job has been held up considerably by cavy formations. At 4500 feet a cave filled up the hole about 500 feet and this was cemented off with 700 sacks of cement and 2100 sacks of sand. It set two weeks. There was a smaller cave just under this which was handled without cementing but another from 5 000 to 5258 feet had to be cemented. Company is still drilling in 8-inch hole.

The Hope has made another location and is building rig in Preston county, on the Briary Mountain anticline near Terra Alta. This test will start below the base of the Venango sand group, somewhere in the Chemung series of the Devonian. The Oriskany should be found at 4500 to 5000 feet and the white Medina, or Clinton, between 6500 and 7500 feet.

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## Gas Line To Logan Co.

CHARLESTON, W. VA., Nov. 24.—South Penn Oil Co. plans to put in gas line to handle output of its five-million foot flow from its well on the Yawkey-Freeman property in Logan county, Logan county. This well is near the development of the Wacotock Producing Co., which has resulted in several gassers and two oil wells, the latter in the Berea sand. South Penn found its gas in the top of the Big Lime at 1786 to 1792 feet. The location is at the head of Hewitt Creek, one and one-half miles southwest of Lake postoffice and six miles northeast of Logan.

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WASHINGTON, Nov. 22.—Negotiations are being conducted relative to the founding of a company for the exploitation of the petroleum fields in Roumania belonging to the firm of Ilias Stratulat, in Bucharest, which supplies large quantities of benzine to the Czechoslovak Ministry of National Defense, according to Commerce Reports.

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SHREVEPORT, Nov. 23.—Eugene Holman, division manager here for the Humble Oil & Refining Co., left today for Hattiesburg, Miss., where he is to be married tomorrow. He and his bride will spend a month in New York city.

## Demonstrate Machine To Stop Pollution

NEW YORK, Nov. 23.—A demonstration of a device whereby oil may be removed from bilgewater and part of the troubles from pollution of coastal waters prevented was made by the Standard Oil Co. of New Jersey before a body of health officers and chemical engineers aboard the tanker Charles Pratt in New York Bay.

The results of the demonstration will be presented before the International Conference of Maritime Nations on the question of pollution of coastal waters. Former Congressman T. Frank Appelby, sponsor of the bill providing for the calling of the conference passed by the last Congress, was present. W. H. Mencke, engineer for the Standard Oil Co. and inventor of the device, explained its working and said it would be installed on many Standard Oil tankers soon. He explained that by adding one part of the fuel oil to nine parts of bilge water, thus producing a heavier oil mixture than normal, the device would separate the oil from the water and prevent its being pumped into the sea.

On the same subject, Oil News, London, in its Nov. 17 issue says:

"The devices which have been evolved principally have in mind the object of discharging oil-free water into the harbor. There is, however, another and extremely important aspect of this operation. The oil as recovered from these devices, still contains a proportion of water and dirt, rendering it, as a rule, unfit for actual use as a fuel without further treatment. This water and dirt are usually so intimately mixed with the oil as to form an emulsion, and no matter how long this is allowed to settle, it never separates. Some force of greater magnitude than gravity must be applied to break it into its component parts of pure oil, water and dirt. There has, however, been put on the market recently an entirely British-made centrifugal oil purifier, by means of which it is possible rapidly and efficiently to purify this recovered oil, rendering it entirely fit for further use.

"This new machine is known as the Vickcen oil purifier, and is handled by Messrs. British Separators, Limited, who are associated with the well-known firm, Vickers, Limited. The machines have already been largely used on board ship for the purification of fuel oil and lubricating oil in connection with marine power plants, and for the same purpose in connection with land power plants, and also for the dehydration of transformer oil. It is most fascinating to watch these machines in operation. The mixture of oil, water and dirt flows into a cup at the top of the machine: below this are three spouts. From the bottom is discharged the water and dirt, and from the one above the pure oil. The top one is merely a safety device. The machine will run for hours with practically no attention whatever.

"We have no hesitation in describing these machines as a triumph of British engineering skill, and a special interest attaches to them in that they enable compliance with the Oil in Navigable Waters Act to become in some cases, a commercial advantage, due to the rapid and efficient recovery of oil in an entirely fit state for use."

## Will Complete Tonkawa Well With Diamond

GARBER, OKLA., Nov. 24.—A diamond core drill will be used to complete a well for the Comar Oil Co. from the surface to a pay sand in the Tonkawa field. The machinery is being rigged up. Its location is near the center of the southwest of 2-24-1 west, Blubaugh farm.

George E. Failing, of this place, state agent for the Sullivan Machinery Co., closed the contract to drill the well for the Comar people soon after the Exposition at Tulsa and the large "FK" type machine exhibited at the Exposition will be used in drilling the well. This is a new drill and capable of drilling 5000 feet. A core of the formation will be taken from 400 feet to the Tonkawa sand.

In California and Mexico the diamond core drill has been used in the proven area for drilling wells. In the Mid-Continent this is the debut of the machine to the proven fields. However, one wildcat was drilled with a diamond core drill to 3250 feet thirteen miles north of Garber at Salt Fork and ninety per cent of the core was saved. Another well in Choctaw county was deepened from 2200 feet to 4970 feet.

The small core drills are now used by many progressive oil companies in locating structure or likely oil land. Their success and value in this work is beyond question as one company employs ten of the smooth running little machines.

The diamond core drill well at Tonkawa will be of intense interest to geologists, the U. S. Bureau of Mines, and the rapidly growing circle of those appreciating scientific oil development and recovery. This well drilled by the Sullivan Machinery Co. for the Comar people will give a correct log of the formations as the machine brings to the surface a continuous core; it will show the exact thickness of the oil sand and its porosity, and from this core the scientists of the U. S. Bureau of Mines, who are specializing in this work, can base estimates of valuation, the amount of oil recoverable, and suggest practical methods of eliminating waste.

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TULSA, Nov. 22.—Nelson K. Moody, president, and Dana H. Kelsey, vice-president and general manager, of the Prairie Oil & Gas Co., arrived in Tulsa today. Accompanied by W. R. Kistler, president of the Producers & Refining Co., they inspected that company's refinery in West Tulsa, and also, it is said, cast calculating glances across the road toward the Cosden plant.

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CASPER, Nov. 24.—Robert K. Staley of New York City was in Casper several days last week. Mr. Staley is now with the Haskell interests. He is well known to most of the old timers in Casper.

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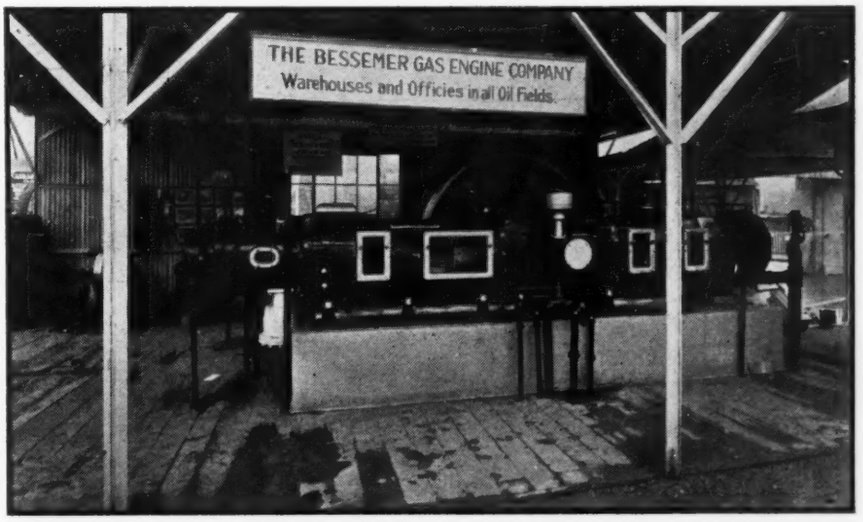
CASPER, Nov. 24.—R. W. Sole, of Thermopolis, western representative of the Benedum & Trees interests, was in Casper several days the past week.




*You'd think this picture was taken somewhere out in the field, but it wasn't. It was taken right in the heart of Tulsa, and shows the Bessemer Gas Engine Co's. exhibit at the International Petroleum Exposition. It is a 165 h.p. type 10 direct connected compressor. Skelly Oil Co., which already had 200 Bessemers, bought this one during the exposition. B. L. Potter, district manager, and F. B. Dunlap, resident manager, both of Tulsa, were in charge of the exhibit, assisted by a number of other Bessemer men.*

# Use Electric Crane To Transfer Material To Location

LOS ANGELES, Nov. 24

THE extremes to which petroleum development companies will resort in an effort to obtain oil production is indicated by the work which is now being done at Point Firmin, near San Pedro, Cal., by the San Pedro-Point Firmin Oil & Gas Co.

This organization, which consists largely of San Pedro business and professional men, is trying to locate oil in a hole which is being drilled on the shore line, beneath a sheer bluff over 100 feet high, at the northwest corner of Los Angeles harbor.

The derrick stands on the beach, and when the tide comes in the pilings which support it are completely submerged and the platform of the derrick is washed by the waves. The rig stands in such a position that it is impossible to deliver materials to it except by the use of a five-ton electric crane which stands on the brink of the bluff, above.

The hole is now down about 2700 feet, with a clean 6-inch bore, and casing set. The bit not long ago passed through 415 feet of formation which is said to have been 15 per cent mineralized. The company struck chunks of asphalt at a depth of 95 feet. It is expected that an oil formation will be reached at a depth of about 2900 feet.

The company was formed at San Pedro and financed with $1 shares. Up to now, according to reports, about $160,000 has been spent on the enterprise. B. F. Parker of Los Angeles is president of the organization, C. C. Towner of Los Angeles is vice-president; A. C. Overton is seccretary. J. E. Over is general manager, and J. E. Mitchell is treasurer.

## Powell Decline Rapid

HOUSTON, Nov. 26.—Powell production today had fallen below 250,000 barrels daily and was showing a steady decline. Humble Oil & Refining Co.'s production was down to 73,000 barrels including 5,000 barrels daily of treated oil. This compares with 82,000 barrels for Humble last Friday and 120,000 barrels for Humble Nov. 1 when its wells were first flowed wide open.

## Rex Lake Well Flows

CASPER, Nov. 24.—Ohio Oil Co.'s first well in the new Rex Lake field has been tubed and is flowing about 60 barrels daily. The well has filled twelve 250-barrel tanks by bailing and swabbing. The location is west of Laramie and another well is to be started at once in the southeast of the southwest of 23-16-77, about a quarter mile northeast of the first well. Field is one of the highest in the United States with elevation about tide of 7584 feet.

## Acquires Plains Pet. Corp.

NEW YORK, Nov. 23.—Southern States Oil Corp. has acquired the Plains Petroleum Corp. of Tulsa. Plains Petroleum properties consist of leases on 31 quarter-sections. or 4960 acres, on which there are 22 producing wells, in the Osage Nation.

TULSA, Nov. 21.—John M. Mouser, who has charge of the Prairie Oil & Gas Co's. office in Eldorado, Kans., spent several days in the company's Tulsa office during this week.

TULSA, Nov. 21.—Among oil men attending the Shrine convention here today are the following, all connected with the Phillips Petroleum Co.: R. A. Hendricks, George J. Turner, Frank O. Barry, C. D. Covey, J. H. Kellar, and A. Von Tuyl.

# Initial Production Shows Gain Due To Smackover Wells

By Special Correspondent

SHREVEPORT, Nov. 24

INITIAL yield in the Shreveport territory, embracing Arkansas districts, showed an increase of 22,885 barrels during the week just closed, during which there were 30 completions, of which 3 were gassers, 5 failures, and 23 producers with combined initial production of 29,165 barrels, compared with the previous week's record of 45 wells, of which 6 were gassers, 3 failures and 36 producers with a total initial yield of 6280 barrels.

Daily average production showed a decline amounting to 4890 barrels, the total for the week being 181,311 barrels against 186,201 barrels the week before.

All of the new producers are in Arkansas, 21 of them in Smackover and 2 in Stephens. North Louisiana went through the week without a single oil producer to its credit, but with three gassers recorded, one each in Morehouse, Ouachita and in the Webster-Bossier gas district. Although it failed to report a new oil producer, North Louisiana continues to command attention of the oil fraternity in view of the recent discoveries in Union and Webster parishes, in which new producing areas are believed to have been found, through the Davidson and Palmer and the Oil Fields Gas Co's. tests, respectively, previously reported in these columns.

The largest completion of the week, and which is one of the largest in a long period, was completed by the Humble Oil & Refining Co. being its E. G. Murphy No. 1 in 14-16-15, Smackover at 1995 feet, initial yield 15,000 barrels; and the second largest completion was a 10,000 barrel producer of Page et al, its Alphin No. 1, in 23-16-15, Smackover, at 1995 feet.

Two small wells in section 1-16-17 extended the Smackover producing area more than a quarter of a mile west and proved up a considerable block of acreage between the Smackover area proper and its northwest extension. Both wells are in the 2200-2300 feet sand, namely: King & Timberlake's Hodges No. 1 at 2270 feet, initial yield 25 barrels; and Magnolia Petroleum Co's. Neely No. 1 at 2296 feet, initial yield 35 barrels.

The week's record in Smackover was a total of 21 producers with combined initial yield 29,075 barrels, compared with 26 completions the week before, 2 of them failures, the balance producers yielding 5545 barrels.

In the Stephens, Arkansas, district the two completions were producing wells with total initial yield 90 barrels, compared with 345 barrels from 7 producers the week before.

El Dorado, Arkansas, had nothing to against no completion the week before.

Nevada county, Arkansas, reported two failures, compared with no completion the week before.

DeSoto parish reported a failure, against no completion the week before.

Morehouse parish got two completions, one failure and one gasser, against nothing the previous week, and Ouachita parish reported one gasser compared with five gassers the week before.

Caddo parish, Louisiana, had no completion recorded, against the previous week's record of 2 producers yielding 310 barrels.

In the Bellevue shallow sand district there was no completion the past week, compared with 3 producers yielding 80 barrels the week before.

Red River, East Texas and Homer showed no completion, the same as the week before.

## Completions in North Louisiana and Arkansas, Week Ended Nov. 22

| Company | Well | Location | Depth | Yield |
|---|---|---|---|---|
| **LOUISIANA** | | | | |
| **Haynesville** | | | | |
| El Dorado Chief Oil Co. | McKenzie No. 1 | 35-22-7 | 3750 | s. w. aband. |
| **Bossier—Webster** | | | | |
| Sales & Walker | Bolinger No. 3 | 30-23-11 | 2689 | 10 m. gas |
| **De Soto Parish** | | | | |
| Pollock et al. | Jenkins No. 1 | 25-13-13 | 2817 | s. w. aband. |
| **Morehouse Parish** | | | | |
| Consolidated Carbon Co. | Odom No. 1 | 28-20-5E | 2319 | s. w. aband. |
| Southern Carbon Co. | Spyker No. 10 | 29-21-5E | 2260 | 5 m. gas |
| **Ouachita Parish** | | | | |
| Ouachita Natural Gas Co. | Lieber No. 1 | 5-19-4E | 2130 | 20 m. gas |
| **ARKANSAS** | | | | |
| **Nevada County** | | | | |
| Owens et al. | Waters No. 1 | 3-14-21 | 1260 | dry aband. |
| Smitherman-McDonald | Waters No. 2 | 10-14-21 | 2320 | dry aband. |
| **Stephens** | | | | |
| Atlantic Oil & Producing Co. | Milner No. 3 | 24-15-20 | 2130 | 40 |
| Standard Oil Co. | W. Jones No. 1 | 31-15-19 | 2201 | 50 |
| **Smackover** | | | | |
| King & Timberlake | Hodges No. 1 | 1-16-17 | 2270 | 25 |
| Magnolia Pet. Co. | Neely No. 1 | 1-16-17 | 2296 | 35 |
| J. D. Reynolds | Brierton No. 1 | 25-15-17 | 2300 | 65 |
| Bashara et al. | W. F. Patton No. 1 | 31-15-16 | 2260 | 200 |
| Burch-Walker Drilling Co. | Fee No. 1 | 30-15-16 | 2285 | 200 |
| Forrest Oil Co. | J. A. Cromer No. 5 | 27-15-16 | 2300 | 100 |
| Hines et al. | Fee No. 1 | 30-15-16 | 2280 | 250 |
| Humble Oil & Ref. Co. | C. L. Saxon No. 1 | 32-15-16 | 2260 | 100 |
| Smith Refining Co. | McRae No. 3 | 30-15-16 | 2270 | 200 |
| Smith Refining Co. | Myar No. 4 | 32-15-16 | 2270 | 300 |
| Sun Company | Patton No. 1 | 31-15-16 | 2260 | 100 |
| Anderson et al. | Berry No. 2 | 8-16-15 | 2015 | 200 |
| Caldwell et al. | Murphy No. 1 | 17-16-15 | 2130 | 500 |
| Gladys Belle Oil Co. | Thompson No. 1 | 7-16-15 | 2035 | 100 |
| Hollyfield et al. | Giller No. 4 | 11-16-15 | 2000 | 400 |
| Humble Oil & Refining Co. | E. G. Murphy No. 1 | 14-16-15 | 1995 | 15,000 |
| Humphries Oil Co. | Massey No. 1 | 17-16-15 | 2060 | 400 |
| Oil Operators Trust Co. | Graves No. 3 | 3-16-15 | 1980 | 100 |
| Page et al. | Alphin No. 1 | 23-16-15 | 1995 | 10,000 |
| Penguin Oil Co. | Harrell No. 2 | 17-16-15 | 2115 | 600 |
| Sun Oil Co. | Hays No. 5 | 3-16-15 | 1981 | 200 |

## No. 5 Is Small Well

DENVER, Nov. 24.—While the No. 5 well of the Midwest Refining Co. on the Hogback dome in San Juan county, New Mexico, is a good well, the reports that it is a 5,000-barrel well are considered greatly exaggerated. It is believed it will do about 300 barrels a day. The well is located a quarter-mile south of No. 1 and is in the southeast of 19-29-15. It proves no additional territory.

BOWLING GREEN, KY., Nov. 24.—Paragon has completed line from Glasgow to Burkesville, Ky., where oil is gathered from the Cumberland county pools. Shipments are made from the Glasgow end by tank car to refinery at Toledo.

SHREVEPORT, Nov. 24.—Daily average production in the Shreveport territory, embracing Arkansas and North Louisiana fields, during the week just closed totaled 181,311 barrels, compared with 186,201 barrels the previous week, a decline of 4890 barrels. Increases were shown in Haynesville, Bellevue and Stephens, but declines were recorded in all other districts in the territory.

By districts the daily average for the weeks ended Nov. 23 and Nov. 16 follows:

| Daily Average | Nov. 23 | Nov. 16 |
|---|---|---|
| Caddo, light | 8,613 | 8,602 |
| Caddo, heavy | 2,308 | 2,386 |
| Red River-DeSoto | 6,320 | 6,354 |
| Haynesville | 27,720 | 23,648 |
| Homer | 8,840 | 9,073 |
| Bellevue | 6,440 | 6,384 |
| El Dorado | 19,090 | 19,274 |
| Smackover | 98,980 | 107,656 |
| Stephens | 3,000 | 2,734 |
| Total | 181,311 | 186,201 |
| Decrease | 4,890 | |

TULSA. Nov. 23.—E. Russell Lloyd, representing the Marine Oil Co., of Denver, spent a part of this week in Tulsa on business.

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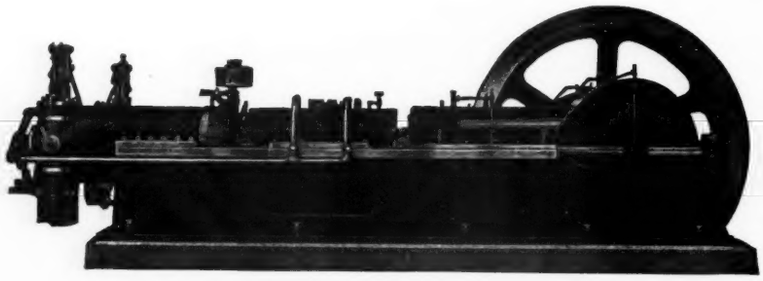

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## R. G. Jennings Succeeds Father As Bank Head

PITTSBURGH, Nov. 26.—R. G. Jennings has been elected president of the Columbia National Bank, Pittsburgh, to succeed his father, Edward H. Jennings, who died on Nov. 17. Mr. Jennings was associated with his father in various oil enterprises for many years and during the past few years has been closely identified with the affairs of the bank.

He is vice-president of the E. H. Jennings Bros. Co., as well as on the Jennings Oil Co., Kanawha Oil Co., Pennhoma Oil Co., Manatee County Land Improvement Co. and a director of the Citizens Savings Bank of Pittsburgh and the Pittsburgh Oil & Gas Co.

Edward H. Jennings, was 71 years old. He died in the Allegheny General Hospital from the effects of an operation. He lived in Fifth and Amberson avenues.

Mr. Jennings entered the oil producing business 50 years ago, becoming associated with his father Richard Jennings, in petroleum production in Western Pennsylvania, and later he became interested in gas production.

Gold and silver mining also drew his attention, some of his holdings in these metals being rated among the most profitable in the mining industry. In the later years of his life he was active also in banking circles.

Born at Brady's Bend, Pa., August 10, 1852, the son of Richard and Katherine Evans Jennings, he was educated in the public schools there. When 20 years old he entered the oil business with his father. He was given a practical business training early in life and entered new fields of endeavor only after the closest study, and was untiring in his efforts in the acquisition and subsequent operation of new fields.

In 1891 he formed the firm of E. H. Jennings and Brothers in Pittsburgh, with offices now in the Columbia Bank building. He was a pioneer in the Bakerstown and Wildwood fields, and his well, the Matthews, in the McDonald field startled those engaged in the industry with a daily production of 10,000 barrels. Later he sold his holdings in the Sisterville field for more than a half million dollars, still retaining hundreds of wells in many producing sections.

### Banking Connections

Mr. Jennings was a former president and director of the Pure Oil Co., treasurer and director the Delmar Oil Co.; president and director of the Jennings Oil Co. and Jennings Producing Co.; treasurer and director of the Kanawha Oil Co; a director of the Manufacturers' Light & Heat Co., National Fuel Co.; New Cumberland Water and Gas Co.; Ohio Valley Gas Co.; Pure Oil Pipe Line Co.; Tri State Gas Co.; United States Pipe Line Co.; Venture Oil Co.; Wetzel Gas Co.; Western Pennsylvania Gas Co.; Wheeling Natural Gas Co.; president and director of the Producers' and Refiners' Oil Co. and the Quaker Oil and Gas Co; vice president and director of the Bessemer Coke Co; and director of the Jennings Mines Co. and a director of the Emerald Coal and Coke Co.

Eight years ago he was elected president and a director of the Columbia National Bank, positions which he retained at the time of his death. He was a former president and director of the Colonial Trust Company of Pittsburgh, trustee of the Dollar Savings Bank, director of the Freehold Bank and president and director of the Colonial Trust Company at Farrell, Pa. For years he also was president of the Pennsylvania Trust Co. and was one of the prime movers in the organization of the American Trust Co.

Mr. Jennings married Miss Mary J. Colwell of Kittanning in 1896.

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WASHINGTON, Nov. 22.—The Anglo-Persian Petroleum Co. which obtained the exclusive concession to explore Greek Macedonia for petroleum has not met with much success, according to V. S. Consul Leland B. Norris at Salonika. Two geologists have spent six months exploring this territory and an expert from the London office has spent two months checking over results. It is understood that he has recommended an abandonment of the effort. Numerous small traces in river beds and springs have been located, but in no case was there indication of quantities commercially interesting, Consul Morris says.

---

NEW YORK, Nov. 22.—Herbert L. Pratt, Jr., son of the president of the Standard Oil Co of New York, is to go to Mesopotamia soon where he expects to spent the next few years in the development of oil properties there and in Turkey. Mr. Pratt was recently graduated from Harvard.

---

CASPER, Nov. 24.—Geo. W. Keys has disposed of his oil interests at Osage, Wyo., and returned to his former home at Oberlin, Kans.

### Gulf Coastal, Texas Completions, Week Ended Nov. 24

| Company | Lease—Well | Field | Depth | Prod. |
|---|---|---|---|---|
| Orange Petroleum Co | Chesson 5 | Orange | 3300 | 350* |
| Orange Petroleum Co | Berwick 3 | Orange | 3425 | Aband. |
| Republic Production Co | Dolbear 41 | Hull | 2275 | 200* |
| Humble Oil & Refining Co | Simms Smith 52 | Goose Creek | 2550 | 135* |
| Humble Oil & Refining Co | T. L. Smith 1 | West Columbia | 3250 | 75* |
| Mutual Oil Co | Booth 1 | Blue Ridge | 3900 | 5* |
| Centser Oil Co | Trustee 5 | Batson | 775 | 5* |
| Vinton Petroleum Co | Gray 23 | Vinton, La | 2400 | 50 |

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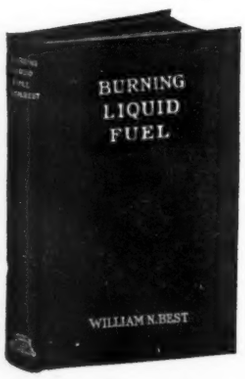


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## Receipts Of California And Foreign Oils

NEW YORK, Nov. 22.—Receipts of California oil (crude and refined oils) at Atlantic and Gulf Coast ports for the week ended Nov. 17 totaled 1,227,000 barrels, a daily average of 175,286 barrels, against 1,380,000 barrels, a daily average of 197,142 barrels for the week ended Nov. 10, according to the American Petroleum Institute.

### California Oil Receipts at Atlantic and Gulf Coast Ports

(Barrels of 42 gallons)

| | Week Ended Nov. 17 | Week Ended Nov. 10 |
|---|---|---|
| **At Atlantic Coast Ports** | | |
| Baltimore | 275,000 | ..... |
| Boston | 155,000 | ..... |
| New York | 457,000 | 950,000 |
| Philadelphia | 75,000 | 95,000 |
| Others | ..... | 65,000 |
| Total | 962,000 | 1,110,000 |
| Daily average | 137,429 | 158,571 |
| **At Gulf Coast Ports** | | |
| New Orleans and Baton Rouge | 265,000 | (a) 270,000 |
| Daily average | 37,857 | 38,571 |
| Total Atlantic and Gulf Coast Ports | 1,227,000 | 1,380,000 |
| Daily average | 175,286 | 197,142 |

(a)Revised

### Imports of Petroleum at Principal United States Ports

According to figures collected by the American Petroleum Institute, imports of petroleum (crude and refined oils) at the principal ports for the week ended Nov. 17 totaled 1,627,000 barrels, a daily average of 232,429 barrels, compared with 1,900,000 barrels, a daily average of 271,429 barrels for the week ended Nov. 10.

### Imports of Petroleum at U. S. Ports

(Barrels of 42 gallons)

| | Week Ended Nov. 17 | Week Ended Nov. 10 |
|---|---|---|
| **At Atlantic Coast Ports** | | |
| Baltimore | ..... | 70,000 |
| Boston | 195,000 | 140,000 |
| New York | 66,000 | 534,000 |
| Philadelphia | 65,000 | 115,000 |
| Others | 244,000 | 200,000 |
| Total | 570,000 | 1,059,000 |
| Daily average | 81,429 | 151,286 |
| **At Gulf Coast Ports** | | |
| Galveston district | 644,000 | 329,000 |
| New Orleans and Baton Rouge | 228,000 | (a) 314,000 |
| Port Arthur and Sabine district | 185,000 | 102,000 |
| Tampa | ..... | 96,000 |
| Total | 1,057,000 | 841,000 |
| Daily average | 151,000 | 120,143 |
| **At All U. S. Ports** | | |
| Total | 1,627,000 | 1,900,000 |
| Daily average | 232,429 | 271,429 |

(a)Revised

NOTE:—Figures are presented for the week ended Saturday morning so as to conform with period covered by the Institute report of estimates of daily average gross production. Figures are subject to revision each week. They are complete for all the principal ports where foreign mineral oil is imported.

---

CASPER, Nov. 24.—Wallace Gordon, formerly with the Union Oil Co. of California on geological work in Wyoming, was in Casper the past week. He is now associated with Carl Beal of San Francisco and Los Angeles.

# Re-conditioning Of Smackover Wells Would Increase Oil Yields

**By Paul Wagner**
STAFF REPRESENTATIVE

SHREVEPORT, Nov. 16. THAT much of the water produced with the oil in the Smackover district of Arkansas can be excluded by proper repair work is the burden of a report on the eastern part of this oil and gas field just issued by the United States Bureau of Mines in co-operation with the Arkansas State Bureau of Mines, Manufactures and Agriculture.

The Smackover field, which is described as being at present the most important area in Arkansas from the viewpoint of drilling activity and the production of oil, is now making between 100,000 and 105,000 barrels daily of crude petroleum.

Present production compares with approximately 125,000 barrels daily, July 1, last, and an estimate made in the report mentioned of total recovery to August 1, last, of about 25 million barrels of oil.

The report was written by H. W. Bell, formerly in charge of the Dallas office of the United States Bureau of Mines, but who more recently resigned to take up oil and gas supervisory duties for the Louisiana State Conservation Commission; P. S. Haury, associate engineer in the Dallas office of the Bureau of Mines; and R. B. Kelly, also of the Dallas office.

This report deals specifically with the eastern part of the Smackover field, embracing about 14,700 acres in Union and Ouachita counties. The proved area totals approximately 21,500 acres, of which the eastern part constitutes about three-fourths of the field.

When the report was completed, and the situation has changed only slightly since that time, approximately 13 per cent of the Smackover production classified as the so-called light oil, which ranges in gravity from 23 to 28 degrees Be.; gravity of the heavy oil ranges from 18 to 23 degrees Be.

### Reconditioning of Wells

The conclusion is stated in the report that the ultimate recovery of oil from the field can be increased by greater care to avoid drilling wells into water, by a concerted campaign to repair such wells as have been drilled into water and by adopting production methods that will reduce the waste of gas.

It is pointed out by the Bureau of Mines men that "the fact that a well makes water does not necessarily mean that the well is at fault. The water may be coming to it through the oil sand from another well. Such water is called 'secondary.' When a well itself lets water into the oil sand, the water it produces is called 'primary.'

"Primary water may come from several sources: (1) top water may be entering the well through a faulty water string; (2) the well may be drilled into one of the three edge waters; or (3) it may be drilled into the bottom water.

"(1) It is known that top water is entering some wells through water strings that have been line-cut or otherwise injured by swabbing. The leak in such a water string, if above the shoe, can be located by running a casing tester. The method of repair would be to set a smaller string of casing with a packer below the leak.

"If the water is coming around the casing shoe, it may be necessary to bridge the well with cement immediately below the shoe to determine whether the water is entering here or coming from a deeper source. The taste will not distinguish top water from bottom water.

"It is known that salt water exists above the Nacatoch formation. There probably is considerable difference between the chemical content of the lower waters and the salty upper water. Chemical analyses are now being made to determine the chemical characteristics of the several waters that have been defined in the Smackover field.

"(2 and 3) By far the greatest amount of water produced in the Smackover field is either edge water or bottom water. Wells that were drilled into these waters should be repaired by plugging to a point above the indicated source of the water.

"When plugging back for edge water it is not always necessary or desirable to permanently exclude all of the water by plugging through the caprock above that stratum. If the water can be considerably decreased and the oil increased by plugging off only the lower part of the edge-water sand, it may pay to produce that way until the water becomes dominant again.

"Another stage should then be plugged in the edge-water sand or it should be entirely sealed off. The investigation indicates, however, that the edge-water sands in the Smackover field are thin and that they have continuous partings above them. It is, therefore, probable in this field, that after an edge-water has advanced to a well that well will secure little oil from the edge-water sand and it will be profitable to plug this sand off entirely."

### Logs of Wells Studied

The logs of nearly all the wells in the eastern Smackover area and many production records were studied to determine the underground conditions. In this work, the Bureau of Mines men used more than 40 well log cross-sections, which were laid out and drawn to horizontal and vertical scale. These sections were so selected as to cover the entire area studied and make many intersections in order to check them against each other.

"The cross-sections indicate," according to the report, "that sedimentation was extremely irregular toward the top of the Nacatoch sand series. Many well logs show shale and even gumbo at the depth indicated by the cross-sections for the top of the oil or gas sand.

"In sec. 1-16S-16W, sections 4, 5 and 6-16S-15W, and section 36-15S-15W, some well logs show sand formations above the indicated top of the gas sand. The change in deposition from sandy material to gumbo was not abrupt over the entire area. It began earlier or lower in the series at some localities than at others.

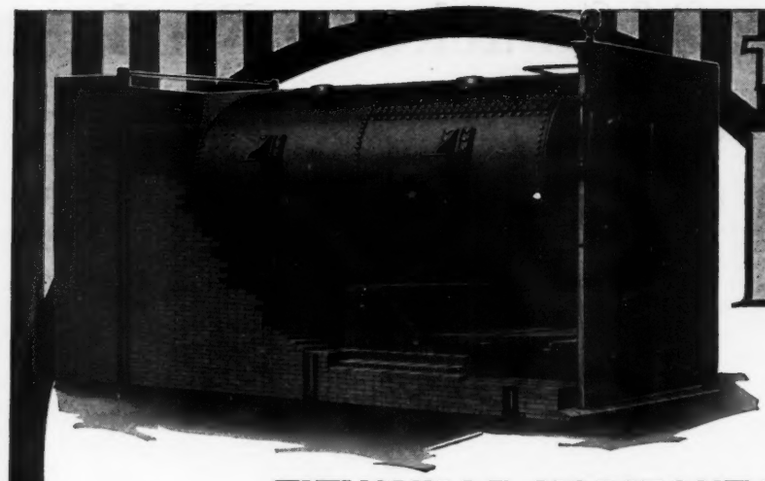
"In addition practically all the wells were drilled to completion with rotary tools. As the field was drilled very rapidly it has suffered to an unusual degree by indifferent logging. Hence correlations made by determining the top of the sand series through the inspection of drillers' logs and contouring on these points are uncertain.

"The correlation of the top of the Nacatoch sand is checked throughout by correlations of the bottom water and several edge-water sands. The cross-sections show a definite parallelism between the top of the sand, as logged in very many wells, and the bottom-water and edge-water sands.

### Positions of Waters

**"Lower Waters**—The rather general belief that everywhere in the Smackover field the lower water attained a definite level has led to the drilling of a large number of wells into one or another of these waters. The cross-sections show that the waters follow the bedding planes and depth of any one of them varies from place to place according to the position of the well on the structure.

**"Bottom Water**—The bottom water lies in a porous bed at a depth of 98 to



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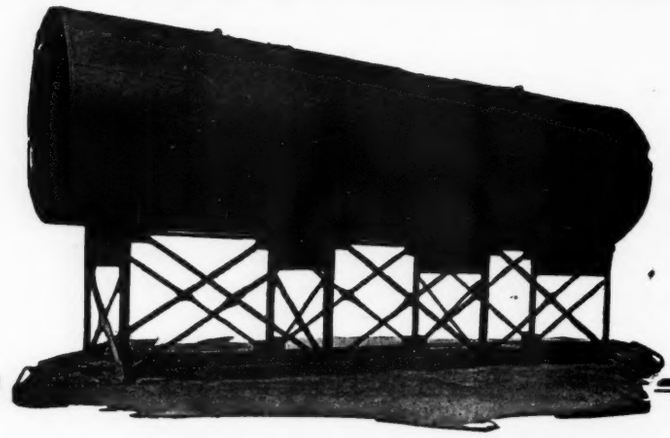

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100 feet below the top of the Nacatoch sand, as contoured. This water was definitely located in the following wells:

| Company | Well No. | Section | Depth of Water Sand below Sea Level | Depth below top of Nacatoch Sand |
|---|---|---|---|---|
| Harris Drg. Co. | No. 1 Spahr | 35–15–16 | 1956 fet | 100 ft. |
| Amerada Pet. Corp | No. 1 Flenniken | 6–16–15 | 1907 ft. | 100 ft. |
| Empire Gas & Fuel Co. | No. 2A Laney | 36–15–16 | 1919–1921 ft. | 100–102 ft. |
| Standard Oil Co. | No. 3 McClanahan | 6–16–16 | 1915–1922 ft. | 99–106 ft. |

"Wells which have been drilled to a depth of the bottom water are marked with a rhomb on the map, Plate I, accompanying the report. Several wells in Sections 9 and 16-16-15 which were drilled to the depth of the bottom water did not produce much water. These are in a locality where the productive formations are hard and compact and the wells produce gas with very little oil or water. Later reports on several of these wells, however, show that they are producing a little water.

"The large gas wells, Invader Oil Co., Umsted No. 1, and Nate Parris, Umsted No. 1, in Section 4-16-15, as also the Standard Oil Co.'s wells, Sid Umsted Nos. 8 and 9, in Section 32-15-15 were drilled to the depth of the bottom water but are reported to produce no water. These wells are in an area where the lower sands are dense and the wells produce mainly gas.

"The high gas pressure may prevent the entry of water which is under low pressure or the water-bearing stratum may be too 'tight' or compact to permit the passage of water. It is not unlikely that water will appear in these wells after the pressure is reduced.

"It also is possible that the bottom water horizon contains oil and gas in a small area on this high part of the structure and that these wells will not make water for a long time.

**"Edge Water**—This is water contained in a sand stratum that also contains oil at higher elevations or farther up the dip. When oil is withdrawn from the sand, edge water follows up dip and progressively reaches wells higher up the dip that have penetrated edge-water sand. Three such edge-water wells were located on the north flank of the structure by means of the cross-sections.

"The approximate limits attained by these edge-waters are outlined on the map by lines with approximate symbols for each water. Similar symbols are used to designate the wells which have penetrated the respective edge-water sands. Along the north flank these edge-water lines outline the advance of the waters as of June 1, 1923. Later production reports were not available for use in the preparation of this map.

**"First Edge Water**—The first edge-water lies along the northeastern edge of the field at an average depth of 20 feet below the top of the Nacatoch sand. The depth into the sand in this water is more variable than for the other edge-waters. This is due, in part, to the production methods employed.

**"Second Edge Water**—The second edge-water lies at an average depth of 42 feet below the top of the Nacatoch sand. It was definitely located in Sun Oil Co., Johnson No. 2, section 30-15-15, where it was shut off by plugging the bottom of the hole with cement. The production of the wells within this second edge-water belt was checked against the cross-sections and the contour map and it was found that all wells that entered the Nacatoch sand to a depth of 42 feet or more produce much water while those that were not drilled to this depth into the Nacatoch sand produce little water.

"This test of the correlation checks the contours at the top of the Nacatoch sand with a limiting error of two feet. Errors in well measurements would easily account for the variation of two feet. A number of the well logs used on the cross-sections show a thin shell above the second edge-water sand.

"On the southeast flank of the structure, Long Oil Co., Murphy No. 1, in the southwest corner of Section 15-16-15, was drilled into salt water at shallower depth than the third edge-water sand. The water was shut off by plugging, but it was later brought in again by swabbing. It probably lies under a shell which is logged in a number of wells in this vicinity at a depth of 47 feet below the top of the Nacatoch sand as contoured. This water is here called second edge water, although it is not necessarily continuous with the second edge water mapped on the north flank of the structure.

**"Third Edge Water**—A third edge-water was found at an average depth of 72 feet below the top of the Nacatoch sand. This water was traced almost all the way around the area studied and lies at nearly uniform depth below the top of the Nacatoch sand. It was the most reliable marker used in developing the correlation.

"This third edge water was definitely located in the following wells:

| Company | Well No. | Section | Depth of water sand below sea Level | Depth below top of Nacatoch Sand |
|---|---|---|---|---|
| Amerada Pet. Corp | No. 1 McKenzie | 36–15–15 | 1928 ft. | 72 ft. |
| Newton Oil Co | No. 1 Poole | 25–15–16 | 1929 ft. | 71 ft. |
| Walls Oil Co | No. 1 Lyell | 3–16–15 | 1904 ft. | 73 ft. |
| F. C. Henderson | No. 2 Smith | 18–16–15 | 2086–2088 ft. | 71–73 ft. |

"In Forrest Oil Co., Lewis No. 3A, Section 36-16-15, the depth of this water was determined as 78 feet below the top of the Nacatoch sand. This greater interval was checked by a study of the production from other wells in the immediate vicinity.

**"Advance of Edge Water**—Waite Phillips Oil Company, Plate No. 1, Section 10-16-15, presents an interesting example of the encroachment of edge water. The well was drilled to the third edge-water sand and produced a large quantity of clean oil for a period of 30 or 40 days.

"At the end of that time several neighboring wells were completed in the same sand. One of these wells, Humble Oil & Refining Co., Pate No. 1, started producing 9000 barrels per day of pipe line oil. On the next day both the Waite Phillips and the Humble wells sanded up and showed salt water when they were cleaned out.

"In Section 18-16-15, Henderson Oil Co., Smith 2, completed above the third edge-water sand for large production of clean oil. The Henderson well was then deepened to this sand, in the hope of securing similar production, and encountered the edge water. It is a common occurrence for wells to show large production a short distance from edge water.

"The east, south, and southwest flanks of the structure will no doubt show shallower edge water as oil is withdrawn from the producing sands or as wells are drilled beyond the present limits of the field in these directions.

"The investigation of the edge waters indicates that the partings in the Nacatoch sand series of the Smackover field are effective barriers that prevent the migration of fluid across the bedding planes. The edge-water lines bear inward across the contours on the anticlinal portions of the structure and outward through the synclinal portions. This condition has been noted in other oil fields and indicates that oil accumulates farther down the flank in structural troughs than on the adjacent noses."

### Waste of Natural Gas

The production decline is hastened by the great waste of gas, it is pointed out by the Bureau of Mines men, who point to the common practice, where wells produce much gas in proportion to the oil, of letting the gas escape without any restriction; in the hope of getting greater oil production as the gas pressure declines.

It is further pointed out that the "production of such wells offers a fruitful field for study and experimentation to the operators in the Smackover field. It is difficult to make the operator appreciate that the daily production of oil can be increased by restricting the flow of high pressure wells. This has frequently been accomplished in some other fields by setting tubing with a

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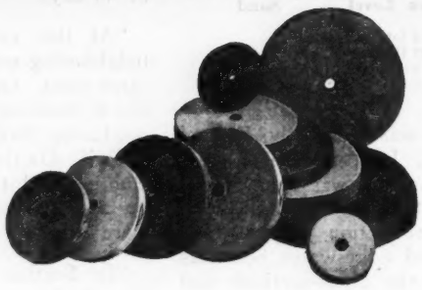

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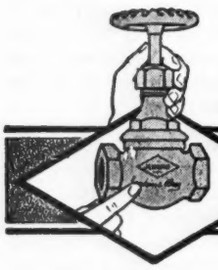

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packer or by packing off the tubing at the casinghead.

"A few high pressure wells have been tubed in the Smackover field and increased oil production with decreased waste of gas has resulted. The conservation of gas is of so much importance in the Smackover field that the discussion is here renewed for emphasis."

### Use of The Swab

Discussing the use of the swab for raising production, the point is made that this practice has done harm to wells in the Smackover field as in many other fields. Special reference is made to the tendency when water is present near the bottom of the well, or somewhat down dip, for it to rush in ahead of the oil when pressure is relieved.

Compressed air, which is used considerably in the Smackover field for lifting fluid, is referred to as not having "the effect, as some have suggested, of putting a suction on the fluid in the sand. The air probably creates a slight back pressure, but, with proper proportions of air pipe and casing, the effect of holding back fluid in the sand is negligible."

Copies of the "Preliminary report on the eastern part of the Smackover Oil and Gas Field" may be obtained without cost by applying to the Arkansas State Bureau of Mines, Manufactures and Agriculture, Little Rock, Ark.

## Industrial Notes

**Curtis Pneumatic Machinery Co., St.** Louis, manufacturer of single and two-stage air compressors, supplied a novel device at the international air races in St. Louis recently by which airplane tires were inflated while the air planes wer eon the field. This device consisted of a 52-gallon Curtis tank mounted on wheels. This was filled with compressed air in a hangar and then taken about the field wherever tires needed inflation.

**Bethlehem Shipbuilding Corp., Ltd.,** Bethlehem, Pa., has just issued catalog D on the Bethlehem (Dahl) mechanical oil burning system. The Bethlehem burner is of the mechanical atomizing type and one of the points made by the manufacturer is that steam is not wasted in the atomizing process. Steam is used in preheating the fuel oil but this is condensed again for boiler water. The Bethlehem burner will burn any grade of fuel, it is claimed, and is for large installations only. The burners are made for either natural or forced draft or a combination of the two.

*Jobbers: Would you like to pick up some particular piece of second hand equipment at a bargain? Perhaps you will find just what you want offered for sale on the classified page of this issue.*

## Magnolia Pipe Line Runs Show Increase

Staff Special

HOUSTON, Nov. 22.—The Magnolia Petroleum Co., pipe line department announces from Dallas headquarters the following crude oil runs for October, which are shown in comparison with September:

| | September | October |
|---|---|---|
| Hewitt | 32,728.34 | 32,559.80 |
| Healdton | 326,345.15 | 353,834.60 |
| Cushing | 124,427.99 | 172,134.63 |
| Yale | 57,441.17 | 55,892.01 |
| Cement | 33,324.72 | 35,802.48 |
| Duncan | 75,946.04 | 86,885.36 |
| Augusta, Kans. | 36,247.38 | 35,248.81 |
| Walters-Beaver Creek | 15,043.85 | 15,188.04 |
| Bristow | 47,735.54 | 81,105.03 |
| Burbank | 37,339.35 | 36,421.62 |
| Wewoka | ..... | 4,638.98 |
| Total Okla.-Kans. | 786,579.53 | 909,711.36 |
| Thrall | 1,739.92 | 2,263.13 |
| Electra-Burkburnett | 247,381.03 | 267,067.16 |
| Henrietta | 8,179.46 | 7,394.49 |
| Corsicana Heavy | 23,146.25 | 22,233.50 |
| Corsicana Light | 1,094,395.41 | 1,545,873.71X |
| Comanche(Desdemona) | 64,350.33 | 65,987.47 |
| Olden (Ranger) | 28,525.77 | 31,231.64 |
| Stephens County | 42,314.34 | 48,150.24 |
| Coleman County | 330.31 | 392.92 |
| Mirando | 35,893.35 | 51,128.23 |
| Mexia | 133,972.26 | 135,004.02 |
| Luling | 181,070.47 | 230,251.70 |
| Total Texas | 1,861,298.90 | 2,406,978.21 |
| Haynesville | 14,502.48 | 14,779.24 |
| Bull Bayou | 24,169.52 | 27,982.86 |
| Total Louisiana | 38,672.00 | 42,762.10 |
| Union County | 7,698.56 | 7,710.23 |
| Eldorado Light | 3,711.44 | 23,128.52 |
| East Eldorado | 8,483.99 | 14,737.58 |
| Total Arkansas | 19,893.99 | 45,576.33 |
| GRAND TOTAL | 2,706,444.42 | 3,405,028.00 |

X—Estimated figure.

Stocks and shipments as of Oct. 31 are reported as follows:

TEXAS

| | | Daily Average |
|---|---|---|
| Wichita and Wilbarger Counties Runs | 267,067.16 | 8,615.07 |
| Shipments | 181,691.85 | 5,861.03 |
| Petrolia Runs | 7,394.49 | 238.53 |
| Shipments | 7,751.66 | 250.05 |
| Eastland and Stephens Counties Runs | 145,369.35 | 4,689.33 |
| Shipments | 101,627.27 | 3,278.30 |
| Total Stock | 2,652,966.71 | |

North Central Texas Field

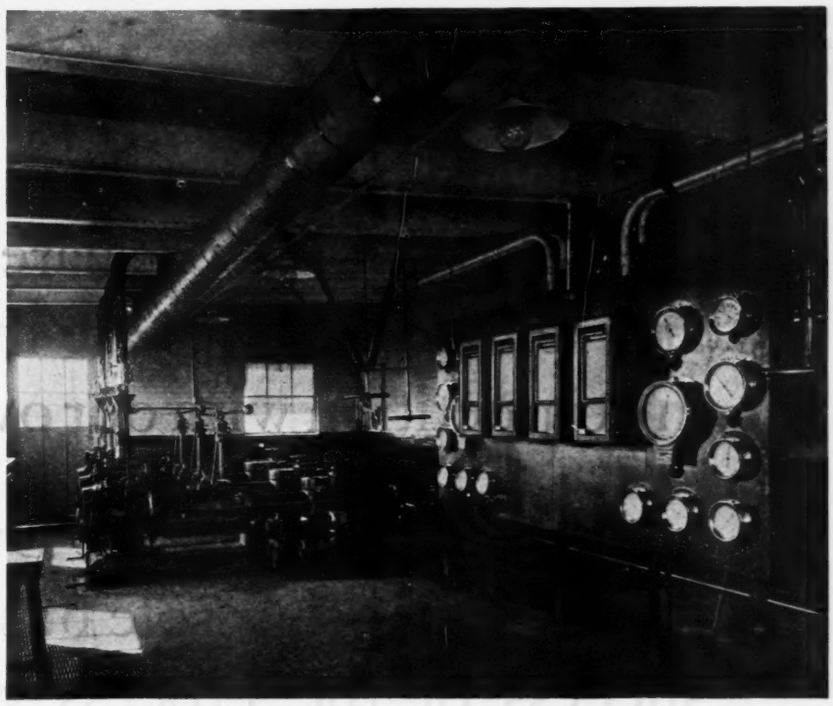
OKLAHOMA—KANSAS

| | | Daily Average |
|---|---|---|
| Runs | 909,711.36 | 29,345.53 |
| Shipments | 408,644.75 | 13,182.09 |
| Stocks | 7,994,554.97 | |

## Georgia Gasoline Tax Totals $948,252

ATLANTA, Nov. 23.—Gasoline taxes collected by the state of Georgia in the fiscal year ended Oct. 1 amounted to $948,252, a gain of $210,096 over the preceding fiscal year. The increase reflects in part the collection of delinquent taxpayers. The tax was 1 cent a gallon. It went to 3 cents Oct. 1.

CHICAGO, Nov. 22.—Dana Pierce was elected president of the Underwriters' Laboratories at a meeting of the board of directors Nov. 10. A. R. Small was elected first vice-president. D. B. Anderson and L. B. Headen continue as secretary and treasurer, respectively.

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Universal Oil Products Company
Owners of the Dubbs Process
208 South La Salle Street Chicago

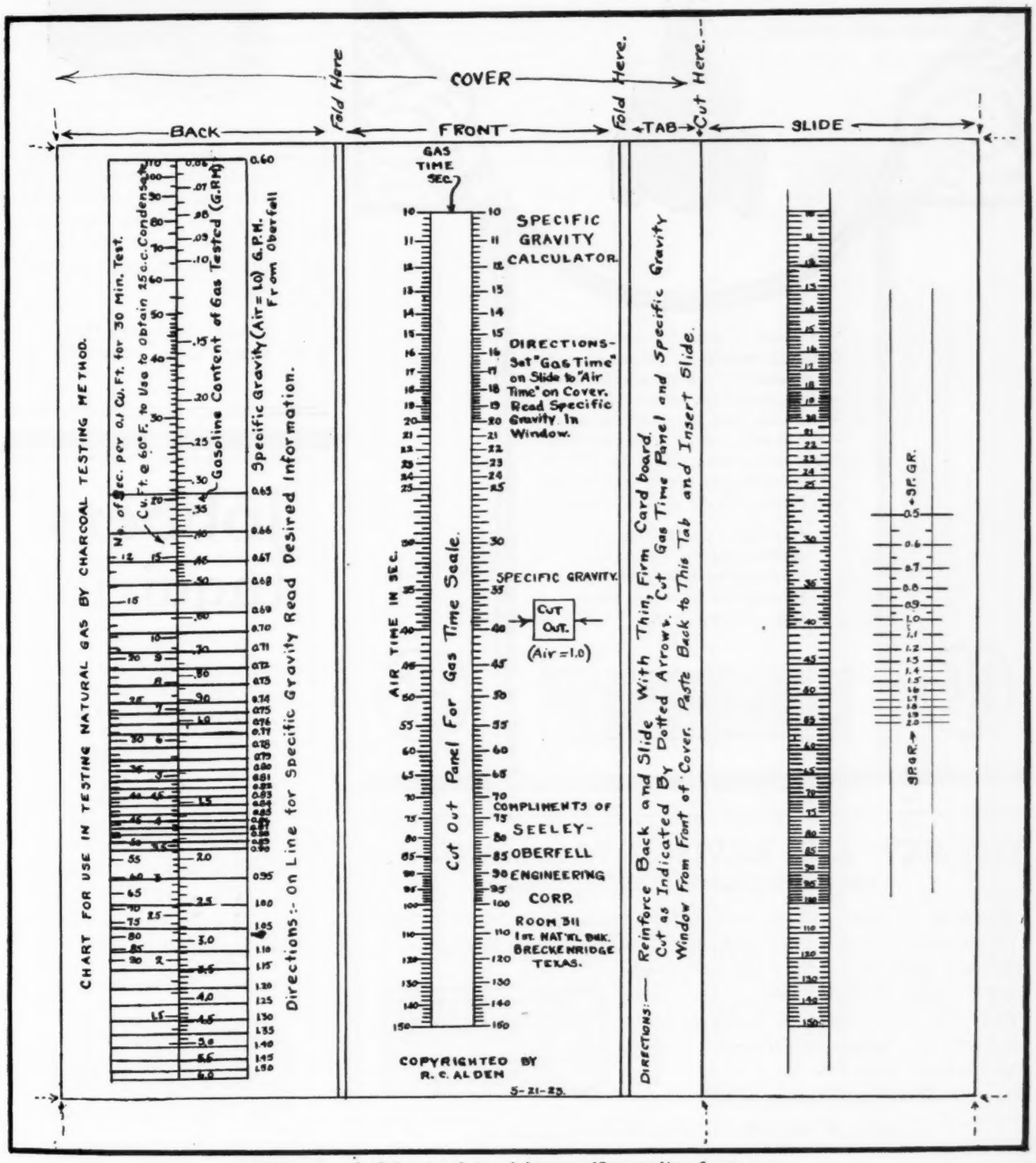
# Short Cuts In Testing Natural Gas By The Charcoal Method

By Richard C. Alden

Seeley-Oberfell Engineering Corporation, Breckinbridge, Texas.

THE charcoal testing method for determining the gasoline content of natural gas has been generally accepted in certain districts by both producers of natural gas and manufacturers of natural gasoline as an accurate and reliable means of gas royalty settlements. Moreover, the charcoal testing method is particularly applicable to preliminary testing in a new field. It can safely be said that no testing method yet devised can compete with the charcoal testing method in the province of preliminary gasoline surveys.

The concensus of opinion concern-


COVER
Fold Here
Fold Here.
Cut Here.
BACK
FRONT
TAB
SLIDE
CHART FOR USE IN TESTING NATURAL GAS BY CHARCOAL TESTING METHOD.
No. of Sec. per 0.1 Cu. Ft. for 30 Min. Test.
Cu. Ft. @ 60° F. to Use to Obtain 25 c.c. Condensate
Gasoline Content of Gas Tested (G.P.M.)
Specific Gravity (Air = 1.0)
From Oberfell
Directions:- On Line for Specific Gravity Read Desired Information.
GAS TIME SEC.
AIR TIME IN SEC.
Cut Out Panel For Gas Time Scale.
SPECIFIC GRAVITY CALCULATOR.
DIRECTIONS- Set "Gas Time" on Slide to "Air Time" on Cover. Read Specific Gravity In Window.
SPECIFIC GRAVITY
CUT OUT.
(Air = 1.0)
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5-21-23.
DIRECTIONS:— Reinforce Back and Slide With Thin, Firm Card board. Cut as Indicated By Dotted Arrows. Cut Gas Time Panel and Specific Gravity Window From Front of Cover. Paste Back to This Tab and Insert Slide.
SP. GR.

**Slide rule calculator for determining specific gravity of gas.**

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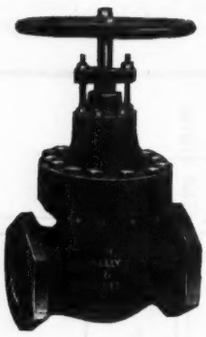

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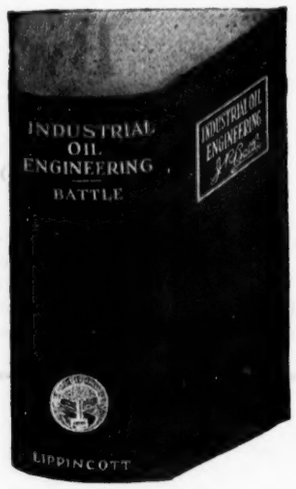


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ing its advantages and disadvantages is as follows:

A—Advantages

1 portability
2 precision
3 cleanliness
4 ease of standardization
5 economy

β—Disadvantages

1 not applicable to gases unler much vacuum
2 not applicable to gases richer than 4 G. P. M. (present information, however, indicates that this disadvantage may be overcome)
3 not as rapid as test-car tests. (portable compression outfits)

Despite the disadvantages of the charcoal testing method (*) precision depends upon properly saturating the charcoal with gasoline. Using the conventional 250c.c. charcoal tube it is desired to so conduct the test that approximately 25 c.c of gasoline should be absorbed in about 30 minutes.

In making periodic royalty settlement tests, obtaining proper saturation can be accomplished easily because of experience in previous tests. But in preliminary tests of new gas, the specific gravity of the gas is the sole guide to proper saturation of the charcoal. The specific gravity of the gas reveals its approximate gasoline content while the charcoal test provides a precise determination of the gasoline yield.

The writer has found that specific gravity of the gas, when carefully determined, is in most cases a very reliable guide in charcoal testing. His experience has been corroborated by the experience of others.

### Gravity Calculator Uses Slide Rule Principle

The calculator shown herewith is believed to be a convenient way of making readily available the information neccessary to conducting a satisfactory test by the charcoal testing method.

In itself it is nothing but a slide rule. By placing the "gas time" on the slide opposite the "air time" on the cover, a specific gravity of 0.81 appears between the arrows in the "specific gravity window".

On the back of the calculator is a chart for use in testing by the charcoal method. This chart is designed for the customary test box using a 2-light meter and in which the charcoal tubes contain 250 c.c of charcoal. The chart shows three parallel graduated axes. The right hand axis is "specific gravity", the next axis to the left is graduated in "G. P. M." (Gallons of gasoline per thousand cubic feet of gas) on its right side and on the left is "Cu. Ft. at 60 degrees F. to use in test". The left hand axis is graduated in "No. of Sec. for 0.1 cu. ft. for test to consume 30 min." The specific gravity grauations intersect all axes, so that, for any given specific gravity the approximate G. P. M. the number of cubic feet (at 60 degrees F.) to use for a satisfactory saturation, and the number of seconds for 0.1 cubic feet for the 30 minute test can be observed at a glance.

For instance, suppose that the specific gravity of the gas was 0.81. Reading the intersections of the various axes with the horizontal ordinate, for a specific gravity of 0.81, we readily see that the G. P. M. of the gas to be tested is 1.35; that to obtain proper saturation in a 250 c.c. charcoal tube, 5.1 cubic feet at 60 degrees F. should pass through the tube; and in order for the test to consume 30 minutes the gas should be passed through at the rate of 0.1 cubic feet (one revolution of the meter hand) in 37 seconds.

It is believed that the specific gravity calculator will be a great help to gas testers and particularly to those who use the charcoal testing method.

## Coast Shipments Under 2,000,000 Barrels

LOS ANGELES, Nov. 22.—Petroleum shipments from this harbor for the week ending Nov. 17 dropped slightly under the 2,000,000 barrel mark, the total being 1,895,000 barrels, compared with 2,115,000 barrels during the previous week.

The past week saw 28 tankers leave the port with loads of oil, the figure being three less than the total number of tanker loads the week previous. Of the 28 loads, 13 went to Pacific coast points, while 12 were consigned to Atlantic seaboard points, and three went to the Orient. Following is the tanker record of the week:

**Nov. 10**

La Placentia, for Martinez; 75,000 barrels crude for Union Oil Company.
District of Columbia, for Fall River, Mass.; 72,000 barrels crude for C. D. Mallory & Co.
B. D. Benson, for New York; 78,000 barrels crude for Tidewater Oil Company.
San Valerio, for Tampico; 118,000 barrels crude for Shell Company.

**Nov. 11**

Liebre, for Everett; 65,000 barrels crude for General Petroleum Corporation.
Lubrico, for Richmond; 66,000 barrels crude for Standard Oil Company.
La Purisima, for Martinez; 45,000 barrels crude for Union Oil Company.

**Nov. 12**

Montebello, for Martinez; 74,000 barrels crude for Union Oil Company.
Howard Walker, for New York; 63,000 barrels crude for Pan-American Petroleum Company.
Hulaco, for Avon; 79,000 barrels crude for Associated Oil Company.
San Fablan, for Buenos Aires; 128,000 barrels crude for Shell Company.
Paul Shoup, for Avon; 80,000 barrels crude for Associated Oil Company.
Matinicock, for New York; 65,000 barrels crude for Standard Oil Company.
J. A. Moffett, for Richmond; 53,000 barrels crude for Standard Oil Company.
Miskianza, for New York; 76,000 barrels crude for Struthers & Barry.

**Nov. 13**

W. M. Irish, for Baltimore; 83,000 barrels crude for Atlantic Refining Company.
Yankee Arrow, for Shanghai; 73,000 barrels crude for Standard Transport Company.
R. J. Hanan, for Richmond; 63,000 barrels crude for Standard Oil Company.

**Nov. 14**

Los Angeles, for Martinez; 75,000 barrels crude for Union Oil Company.
Agwihavre, for New York; 85,000 barrels crude for Atlantic Chartering Company.

**Nov. 15**

John D. Rockefeller, for New York; 81,000 barrels crude for Standard Oil Company.
Chester Sun, for Philadelphia; 68,000 barrels crude for Sun Oil Company.
W. W. Mills, for Philadelphia; 72,000 barrels crude for Pure Oil Company.
Lubrico, for Richmond; 66,000 barrels crude for Standard Oil Company.
F. R. Kellogg, for Boston; 70,000 barrels crude for Pan-American Petroleum Company.
A. C. Bedford, for New York; 100,000 barrels crude for Standard Oil Company.

**Nov. 16**

La Placentia, for Martinez; 74,000 barrels crude for Union Oil Company.
J. A. Moffett, for Richmond; 54,000 barrels crude for Standard Oil Company.

## Output Of Automobiles Turns Upward

WASHINGTON, Dec. 22.—Production of passenger cars and trucks turned upward again in October, according to reports received by the Department of Commerce from 96 passenger car and 119 truck manufacturers. Statistics on trucks include fire apparatus and street sweepers. Comparative figures of motor car output since the upturn in business in 1921, follow:

**Passenger Cars**

| | 1921 | 1922 | 1923 |
|---|---|---|---|
| January | ..... | * 81,696 | 223,819 |
| February | ..... | 109,171 | *254,773 |
| March | ..... | *152,962 | *319,770 |
| April | ..... | *197,224 | 344,639 |
| May | ..... | *232,462 | *350,410 |
| June | ..... | 263,053 | *337,362 |
| July | *165,616 | *225,086 | 297,330 |
| August | *167,756 | *249,492 | *314,373 |
| September | 144,670 | *187,694 | *298,911 |
| October | *134,774 | *217,566 | 334,966 |
| November | 106,081 | *215,352 | ..... |
| December | * 70,727 | *208,010 | ..... |

**Trucks**

| | 1921 | 1922 | 1923 |
|---|---|---|---|
| January | ..... | * 9,576 | * 19,720 |
| February | ..... | * 13,350 | * 22,161 |
| March | ..... | * 20,022 | * 35,260 |
| April | ..... | * 22,640 | * 38,056 |
| May | ..... | * 24,097 | * 43,678 |
| June | ..... | * 26,298 | * 41,145 |
| July | * 11,136 | * 22,046 | * 30,663 |
| August | * 13,400 | * 24,692 | * 30,829 |
| September | * 13,978 | * 19,462 | * 28,632 |
| October | * 13,149 | * 21,795 | 30,141 |
| November | * 10,487 | * 21,949 | ..... |
| December | * 8,656 | * 20,354 | ..... |

*Revised.

## Hursh Co. Re-Organized

SPOKANE, WASH., Nov. 22.—Hursh-Sinclair Refining Co. which plans to build a refinery at Hillyard near Spokane, has been reorganized. Another refinery near Portland, Ore., to operate on California crude has been projected by the company and representatives of Oregon banking interests have been added to the official personnel. New directors are A. F. Poley, president, Seaside National bank, and Fred H. Moore, vice-president of that bank.

Officers are: L. G. Wrather, president; Mr. Moore, vice-president; and Mr. Poley, secretary and treasurer. Alexander Hursh, Long Beach, Cal., is chairman of the board.

Mr. Wrather announced that most of the equipment for the Hillyard plant has been ordered. This plant will use Kevin-Sunburst crude. The company has a few tanks in place at Hillyard but no construction has been done on the plant.

# Present Trend Indicates Consumption Will Equal Production Next June

DEALING with a less uncertain commodity, such as coal, the production of crude oil would be regulated by the amount going into consumption. The coal operator has mapped out in cubic yards and tons the amount of coal in his workings. He can increase or decrease his output to keep pace with the market. But no one has ever devised a practicable method to stabilize permanently supply and demand in the oil fields. And so prices of crude oil of the same quality may vary greatly at different seasons, depending upon whether there is a shortage or surplus. This principle has operated throughout the history of the business and will probably continue to operate in the future, for the two controlling factors of supply and demand can never be fixed in the oil business.

To keep his plant in operation the refiner must have storage for crude oil, and to be able to deliver it to the refiner the pipe line company or producer must have also field storage. The refiner is protected as far as possible from periods of under-supply by his built up stocks of crude oil and refined products. This reserve is necessary, not only for that reason but for the military requirements when the safety of the country is threatened.

What the public does not understand is that a refiner cannot begin running on Tuesday, oil on which the price has been cut on Monday, owing both to the length of time required to move oil half way across the country and to the stocks of higher priced crude already in the refiner's tanks. Nor does the public generally appreciate the very heavy cost of carrying oil in storage for its protection against a time of underproduction.

When stocks above ground are larger than the industry needs in reserve, loss begins because storage facilities must be provided to meet an abnormal condition and heavy carrying charges assumed. The cost of carrying oil in storage is a considerable item, both because of the waste suffered through evaporation of the products and because of the interest charges on the amount of capital demobilized and represented in tankage and its contents.

### The Cost of Storage

How large is this problem represented by surplus stocks on hand and what is it costing the country? On the first of January of this year stocks were well above normal, totaling 375,000,000 barrels. If by the turn of a valve the industry could have practiced conservation it would have started in then to work off the excess oil in storage to reduce carrying charges. But note what has happened since. Despite an increase in consumption, the stocks on hand have gone up day by day so that in the first three-quarters of 1923 instead of lowering the level of storage, there was an increase of 100,000,000 barrels. On the first of October then, with the season of lessening consumption at hand, the oil industry in the United States was carrying in reserve 475,000,000 barrels, representing in capital tied up in crude oil, finished product and the containers, over one billion dollars, and an annual charge for interest and loss of $150,000,000.

That is a situation which ought to cause concern not only to the oil industry but to the public which buys its products. If not a drop of oil was produced or imported, the United States could live on its present stocks for the next eight months.

But, unfortunately, producing wells cannot be turned off and on at will and changes are rather slow in making themselves felt. With all the oil now above the ground we have been adding rapidly to the total. The present production of crude in the United States is about 2,150,000 barrels per day, with an additional 250,000 barrels of imports. Against this total daily supply of 2,400,000 barrels is a present daily consumption of about 2,100,000 barrels, so that for some time there has been going into storage, in round numbers, 300,000 barrels of surplus production every day.

It is a grave question with the industry how much additional oil must be financed and provided for until that time when stocks will be drawn upon. It is unfortunate that government statistics are not available sooner and that the producers have to rely upon other sources for anything like current data. For, of course, the industry must have plans ahead and must prognosticate the probable trend of both production and consumption as well as it can. Dealing with such unknown quantities the one certain thing about an estimate is that it will be proved wrong by results. The rate at which finished products will go into use can be approximated on the theory of continued growth at the rate at which consumption increased in the past. Production on the other hand is dependent upon many less accountable factors.

The accompanying is part of the article in the October issue of The Lamp, official publication of the Standard Oil Co. of New Jersey, dealing with existing conditions in the oil industry. It is of interest as the publicly expressed opinion of the New Jersey company on the vexatious question of when the tide of oil will start flowing out of the storage tanks and the days of profitable operation for every branch of the industry will return. According to the forecast made, the demands for petroleum will call for withdrawal from storage of about 100,000 barrels daily during next June. No account is taken of new flush fields which may be brought in during the intervening time.—Editor.

### Hazards of Producing

The situation is best understood by a little consideration of the peculiarities of the "producing game." In the first place, the continued returns of existing fields cannot be closely calculated. No one knows even approximately how much oil there is in the ground, even where the limits of a field have been closely outlined by drilling. There is no standard of behaviour followed by oil wells. The one fact certain is that after the flush production is off they will yield a decreasing amount of oil, rapidly or slowly, depending upon the depth of the sand, the rock pressure, the number of wells drilled, the nearness of salt water and other factors. A company which did no drilling but only acquired producing wells would still be engaged in a hazardous industry, for the producer must always be in a receptive frame of mind to detect and appreciate signs of failure in one field or favorable development in another. One of the most diffcult problems is to correctly anticipate results from newly discovered fields and the probability of finding other fields. The best calculations of experienced producers have been upset too many times to make them willing to assume the prophet's role.

In the endeavor to estimate the future production, the situation in individual fields is studied and figures compiled for current and prospective yields. These figures are then totaled to make a chart showing the total production in the United States. This again is

subject to influences and errors that are certain to upset to some extent the best forecast. In a similar way the production of fields from which crude is imported is made up and the probable imports charted above the line of prospective domestic production. Both of these estimates are checked against another chart showing the expected drilling activities.

The accompanying charts then are accurate only to the point at which actual figures were obtainable, say to September 1st. Beyond that point the movement of the several lines is mapped as described above.

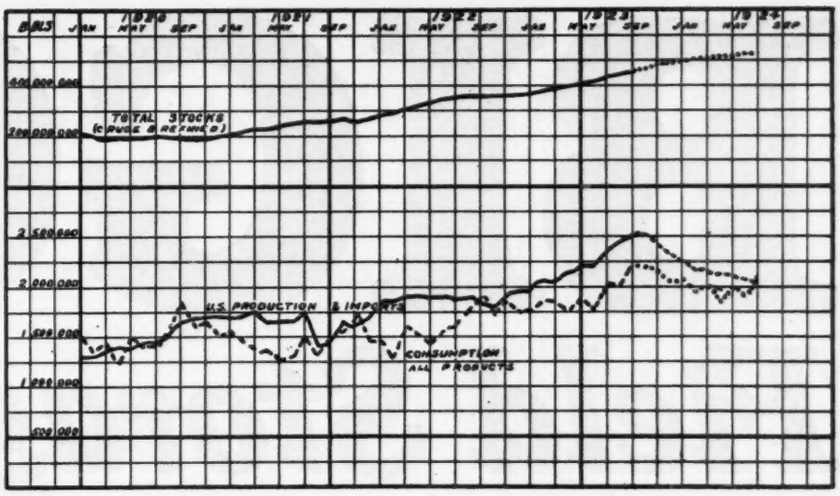
This chart shows that by the end of the current year it is probable that there will be accumulated in the United States about 120,000,000 barrels of crude above the stock of almost 375,000,000 barrels on hand as of Jan. 1, 1923. For the greater part of these stocks storage has been constructed during the year.

### When Stocks Will Decline

Looking still further ahead, the chart indicates that to the first of June, 1924, an additional 32,000,000 barrels, or approximately 200,000 barrels a day of crude oil and finished products will have to be stored, bringing the total probable stocks on June 1st next year to more than 525,000,000 barrels—a total equal to about 250 days' production at the present rate. However, at this point, according to present indications, consumption, which has been rising with the usual seasonal demands, crosses the line of current production and imports, so that there is an indicated draft on storage in the month of June amounting to 100,000 barrels a day. If this expectation is realized, the industry will then be in a healthy condition except for the enormous accumulation of stocks.

Assuming again that the forecast is approximately correct, the total production and imports after June 30th would continue a somewhat slower decline while consumption would parallel its course of the present year, and the draft on stocks would continue at least until the winter of 1924 began to curtail consumption. However, if the demand of the refiners for crude resulted in a higher level of prices and a consequent stimulation of drilling activities, the improvement in the general situation would be further delayed, as would also be the case if the limited wild-cat drilling now going on should develop a considerable new production in localities now unproductive. Then again a marked change in general business conditions, either at home or abroad, would have an important and direct effect on consumption.

Prognostications do not influence Nature, and the date at which the country's consumption of petroleum products will cross the line of production may be a month or three months away from the meeting point indicated on the chart. That is not an indictment of the industry's attempt to guide its present actions by its estimate of probable conditions in the future. The inevitable fact is that before many pages are torn from the calendar the United States will be using more oil than it is producing. The resulting draft on accumulated stocks in storage may be brief or protracted, but unless precedent is of no value it will come, and it will start a fresh wave of drilling and wild-catting.




**Trend of production and consumption for half of 1924 as estimated by Standard of New Jersey**

Extreme fluctuations in the price of petroleum products follow similar fluctuations in the cost of crude oil. Now the industry knows that either extremely low or high priced crude oil is uneconomic. Crude prices such as we experienced three years ago resulted in much ill-advised, unnecessary drilling, with consequent loss to the industry. A period of unprofitably low prices such as now prevails means the abandonment of thousands of small wells which under such circumstances cannot be operated except at a loss. Their neglect and abandonment constitute a menace to the region due to the probability of inundation of the producing sands with a resultant permanent loss to the industry and the public of their production.

### Low Prices Wasteful

The public would be less eager for gasoline at 10 or 15 cents a gallon if it understood this situation. Over a five-year period it would mean a money saving for the consumer to pay at all times a price that made possible reasonable profit to efficiently managed oil companies. When gasoline and other petroleum products are offered at less than the cost of refining, as has been the case at many points this year, it means that capital is going out of the industry which will not return and that eventually the pendulum will swing back to shortages and higher prices. When oil is pressing for sale as it is today, resources that ought to be preserved are depleted and wasted, for conservation means much less than when the produecr is making a profit.

It need hardly be said that the oil industry by and large is fundamentally sound. The manifestations of price wars and falling stock quotations are surface indications of a temporary disturbance which will pass as quickly as it began. An industry which is being called upon daily for upwards of 2,000,000 barrels of petroleum products can view with equanimity even the present over-supply both in current production and in accumulated stocks, showing that it is only a question of time until stability will be restored and a draft made upon stocks in storage.

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## Workers To Run Business For Two Months

By Special Correspondent

ST. JOSEPH, MO., Nov. 22.—What is believed to be an entirely new experiment in bonus arrangements for employes is being tried out here by the Central Oil Co., which has turned the company over to its employes to run during the months of November and December and offers them half the net profits made during that period. In the meantime neither Rupert Cox, president, nor J. B. Harrison, vice-president, will take any part in the management of the company's affairs beyond very general supervision.

What amounts to the two-month loan of the business to its force of workers came as a surprise, the announcement being made at a regular meeting of the force. It is to take the place of any Christmas bonus. According to President Cox, the plan is working out well and the volume of business handled by the company is being materially increased. Profits to the employes will be determined on the basis of their sataries.

A committee of six from among the employes operates the business, these including T. D. Thompson, who represents the salesmen; Ralph Schelkop, the warehouse men; William Farnum, truck drivers; J. Webb, the filling station operators; and Miss Helen Jackson, the office force. Lee Runyan, truck foreman, was selected chairman of the committee.

# BIGGS

## *Field Storage and*

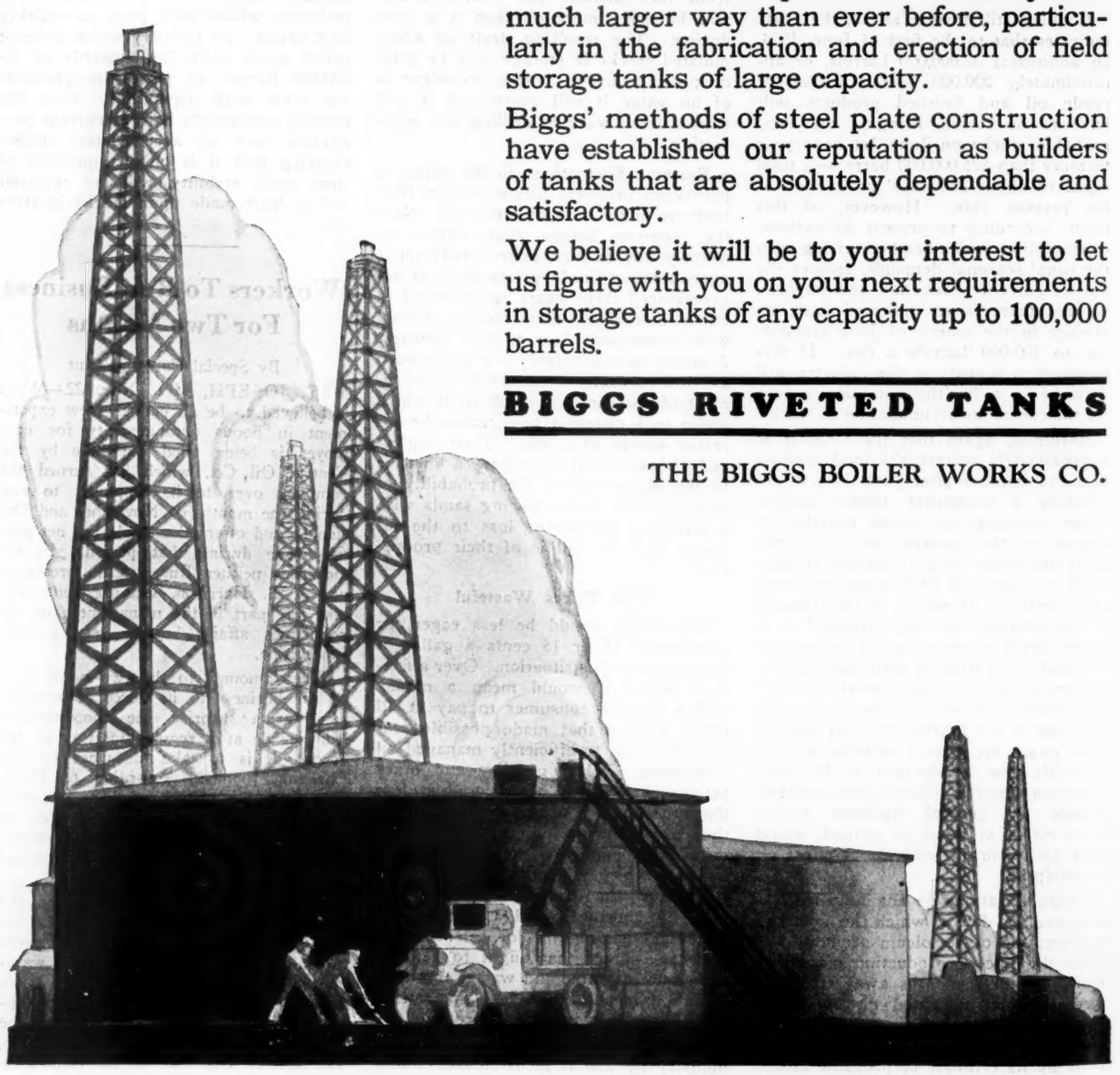
THE completion of our new plant enables us to serve the petroleum industry in a much larger way than ever before, particularly in the fabrication and erection of field storage tanks of large capacity.

Biggs' methods of steel plate construction have established our reputation as builders of tanks that are absolutely dependable and satisfactory.

We believe it will be to your interest to let us figure with you on your next requirements in storage tanks of any capacity up to 100,000 barrels.

**BIGGS RIVETED TANKS**

THE BIGGS BOILER WORKS CO.



# REFINERY-TANK WAGON MARKETS

## Mid-Continent Markets Stronger; Refiners Optimistic

(Refinery Market Prices, pp. 99-101)

Staff Special

TULSA, Nov. 24.

MID-CONTINENT refinery markets have gathered strength in a week which has been marked by a decided improvement in the morale of the refining industry in the southwest. The bug of optimism appears to have bitten the refiner in spite of the frantic efforts of the crepe hangers to keep the insect away for a few more months.

The first visible indication of a better feeling was shown a week ago when Cosden & Co. raised its prices above 7 cents on Navy gasoline and advised contract customers that their shipping instructions would be honored only to the amount of their average takings over a period of months.

A few days later it became known that one company was quietly signing up crude and making connections with properties adjacent to its lines. Since then a mad scramble for crude has been taking place throughout Oklahoma as big and little purchasers have been scouring the field for new connections.

### Competition is Keen

It is not clear just who started taking of new crude connections first although Sinclair is said to have had the start by two days. But it can be said that not many days had passed before the competition for crude was keen. It has been only a few weeks since the Kay County Gas Co. announced that it would buy no more crude at any price for the present. That policy has been abandoned along with proration now.

The demand for crude has been most clearly seen in the high gravity fields of Garber and Tonkawa. Here premiums of 25 cents per barrel have appeared again for the first time in many months. It is apparent that if the present situation keeps up the premium will be the rule again on a majority of the oil purchased by Independent refiners.

It is an odd situation that while each refiner and crude purchaser remains optimistic on his own account he expresses the opinion openly that the industry is a long way from being out of the woods. He hopes the other fellow will be pessimistic while he practices his optimism in secret. Every one appears to have conceived the same brilliant idea at the same time.

Accumulation of crude in preparation for the time when prices will advance is the strongest current movement in the Mid-Continent. It is not the plan of many to work up the crude into refined products in excess of current demands of the trade.

### Runs to Stills Steady

Crude run to stills of 122 Mid-Continent refineries reporting on their activities to the Western Petroleum Refiners Association has shown little or no change for many weeks. While runs have been steady, sales of refined products have been kept at such a high level that stocks have been constantly reduced. It appears probable that the stocks of gasoline in the Mid-Continent will be drawn on throughout November in spite of the set-back given buying by reductions in crude and tank wagon prices.

It is the feeling of many students of the Mid-Continent market that the situation now hangs in the balance and may grow better or worse over the next few months depending on the rate at which refineries operate and the consequent growth or decline of refinery stocks. With their finances as limited as at present it is probable that refiners will have to continue to operate on a hand to mouth basis, selling almost as soon as the material is finished.

### Attitude of Jobber

Another big factor will be the attitude of the jobber. Will he buy or stay out of the market? Since the recent crude and tank wagon cuts jobbers have been quiet and have bought little gasoline for spot delivery.

There are indications today, however, that the jobber may abandon that policy quickly. It is reported that one large distributor is active in the market, buying large quantities for storage at around 6½ cents. It is stated that in addition to buying 100 cars of Navy over a short period he is leasing a tank and expects to have a refinery fill it for him between now and the first of the year.

In spite of the fact that jobbers generally have been out of the market since the two price cuts there has been no tendency toward weakness. The level of prices on Navy today is ⅛ to ¼ cent above the opening of the week. It is impossible to buy at less than 6¼-6½ and many are asking more.

Empire Refineries, Inc., today raised its price ¼ cent per gallon to 6¾ on Navy. It is reported that Roxana Petroleum Corp. will sell no goods at less than 7 cents on a Group 3 basis.

### Credited to Cosden

Virtual withdrawal of Cosden from the market a week ago through the posting of his high price has been one factor in strengthening the market this week. In addition, the average refiner is well sold up over the remainder of the month and some have even obligated most of their output until Jan. 1.

One small refiner announced today that he has increased his runs 500 barrels per day. It is reported that recent crude buying activity on the part of Cosden will be followed by an increase of 5,000 barrels in his daily runs.

Except in the one case noted above jobbers have not begun storing gasoline for next year in any considerable quantities. They have held the opinion that the lowest sag in the market would come about the first of the year. It was at that time that he was preparing to begin storage against higher prices.

If the new optimism in the market and the slight upturn of gasoline prices continues it may be that jobber storage buying may assume large proportions in December and do much to sustain the market.

### Domestic Buying Light

Domestic buyers of kerosene have taken no part in the recent buying activity which has driven prices up nearly a cent a gallon. While exporters have been buying the jobbers have shown little or no interest in quotations offered them.

There has been a little less buying by exporters this week than before. The Standard Oil Co. of Indiana has been an active buyer in Kansas, however, and has driven prices up in that area. The Standard purchases are to cover deliveries to Kansas destinations over the remainder of the year. The goods will be sold through Indiana stations very largely. It is understood that the Indiana company paid around 4¾ cents per gallon.

There is little difference in prices quoted on 41-43 and 42-44 grades recently. Demand of the exporters has been centered on 41-43 and a number of refiners are sold ahead to the first of the year on a large part of the burning oil they expect to manufacture.

In view of the fact that so much of the recent buying has been for delivery

(Concluded on page 107)

*"The law of worthy work well done is the law of successful American life"*

*—Theodore Roosevelt*

CONCENTRATING the buying activities of good jobbers so they are conveniently and constantly kept in touch with all their best sources of supply is worthy work.

For thirty-five years Berry's Sons Company has been doing just that. Both jobbers and refiners have benefitted from this simplification of distribution.

We have the longest successful history of any wholesale distributor of petroleum products. Each day the record is embellished by the tribute of more jobbers whom we are serving to their entire satisfaction.

Make it a habit to ask Berry's Sons about every requirement in petroleum products.

**JAMES B. BERRY'S SONS COMPANY**

**REFINERS and WHOLESALERS**
**PETROLEUM PRODUCTS**

**Oil City, Pa: Chicago · New York · Boston · Philadelphia · Tulsa · London, Eng.**

*ROOSEVELT SERIES*

# Refinery Markets On Light Oil Products

**Pennsylvania, Oklahoma, North and South Texas, Louisiana, Arkansas**

## GASOLINE AND NAPTHA

| PENNSYLVANIA | Prices Nov. 26 | Prices Nov. 19 | Prices Nov. 12 |
|---|---|---|---|
| 50-52 Naptha | 9½- 9¾ | 9½- 9¾ | 9¾-10 |
| 54 Naptha | 9¾-10 | 9¾-10 | 10 -10¼ |
| 58 Gasoline | 10 -10¼ | 10 -10½ | 10½-11 |
| 60 Straight-run gasoline | 10½-11 | 10¾-11¼ | 11½-12 |
| 62 Straight-run gasoline | 11½-12 | 11½-12 | 12½-13 |
| 64 Straight-run gasoline | 13 -13½ | 13½-14 | 14 -14½ |
| 68 Straight-run gasoline | 16½-17 | 17 -17½ | 17½-18 |
| 68-70 Blend, 450 E. P. | -10¼ | -10½ | -10½ |
| 60-62 Blend, 450 E. P. | -10¼ | -10½ | -10½ |
| 62-64 Blend, 450 E. P. | -10¼ | -10½ | -10½ |
| 66-68 Blend, 440 E. P. | -10½ | -11 | -11 |
| 68-70 Blend, 440 E. P. | -10½ | -11 | -11 |
| 68-70 Blend, 420 E. P. | -10¾ | -11¼ | -11¼ |
| **OKLAHOMA** | | | |
| 48-50 450 E. P. naptha | 5½- 5¾ | 5¼- 5¾ | 5½- 6 |
| 50-52 450 E. P. naptha | 5¾- 6 | 5½- 5¾ | 5¾- 6 |
| 56-58 450 E. P. gasoline | 6 - 6¼ | 5¾- 6 | 6 - 6¼ |
| 58-60 (New Navy) 437 E.P.13ll.b.p. | 6¼- 6½ | 6½- 6¼ | 6¼- 6½ |
| 60-62 400 E. P. gasoline | 7¼- 7¾ | 7¼- 7¾ | 7½- 8 |
| 64-66 375 E. P. gasoline | 8½- 8¾ | 8¼- 8¾ | 8½- 9 |
| 68-70 350 E. P. gasoline | 9½-10 | 9¾-10¼ | 10¼-10¾ |
| **NORTH TEXAS** | | | |
| 48-52 450 E. P. naptha | 5¼- 5¾ | 5¼- 5¾ | 5½- 6 |
| 56-58 450 E. P. gasoline | 5¾- 6 | 5¾- 6 | 5¾- 6½ |
| 56-58 New Navy gasoline | 5¾- 6½ | 6 - 6¼ | 6 - 6¼ |
| 58-60 New Navy gasoline | 6½- 6¼ | 6 - 6¼ | 6¼- 6½ |
| 60-62 400 E. P. gasoline | 7¼- 7½ | 7¼- 7½ | 7¼- 7¾ |
| 64-66 390 E. P. gasoline | 8¼- 8½ | 8 - 8¼ | 8¼- 8½ |
| 64-66 375 E P. gasoline | 8½- 8¾ | 8¼- 8½ | 8½- 9 |
| **NORTH LOUISIANA** | | | |
| 56-58 450 E. P. gasoline | 6 - 6½ | 6 - 6¼ | 6 - 6½ |
| 58-60 437.Navy Gasoline | 6½- 7 | 6¼- 6½ | 6¼- 6¾ |
| 64-66 390-400 E. P. Gasoline | 8¼- 8¾ | 8¼- 8¾ | 8½- 8¾ |
| **ARKANSAS** | | | |
| 58-60 450 E. P. gasoline | 6½- 6¾ | 6¾- 7 | 6½- 6¾ |
| 58-60 Navy gasoline | 6¾- 7 | 7 - 7¼ | 6¼- 6¾ |
| 64-66 375 E. P. gasoline | 8½- 8¾ | 8½- 8¾ | 8¼- 9¾ |

## NATURAL GASOLINE

| OKLAHOMA | Prices Nov. 26 | Prices Nov. 19 | Prices Nov. 12 |
|---|---|---|---|
| Grade A, 72-78 375 E.P., 90% Rec. | 5¾- 6 | 6¼- 6½ | 6¾-7 |
| Grade B, 76-82 375 E.P., 85% Rec. | 5½- 5¾ | 6 - 6¼ | 6½- 7 |
| Grade C, 80-88 350 E.P., 78% Rec. | 5 - 5½ | 5½- 6 | 6¼- 6¾ |
| Grade D, 88-92 350 E. P. | 5 - 5½ | 5½- 6 | 6¼- 6¾ |

(Motor Natural Gasoline—Blends)

| OKLAHOMA | Prices Nov. 26 | Prices Nov. 19 | Prices Nov. 12 |
|---|---|---|---|
| Grade 1, 58-62 437 E.P., 91% Rec. | 5¾- 6 | 5¾- 6¼ | 6 - 6¼ |
| Grrde 2, 58-62 450 E.P., 90% Rec. | 5¾- 6 | 5¾- 6¼ | 6 - 6¼ |
| Grade 3, 66-64 440 E.P., 88% Rec. | 5¾- 6¼ | 5¾- 6¼ | 6¼- 6½ |
| Grade 4, 66-70 435 E.P., 85% Rec. | 5¾- 6¼ | 5¾- 6¼ | 6¼- 6½ |
| **NORTH TEXAS** | | | |
| Grade A, 72-78 Absorption | 5½- 6 | 6 - 6½ | 6½- 7 |
| Grade C, 80-88 Compression | 5 - 5¼ | 5¾- 6 | 6 - 6½ |

(Motor Natural Gasoline—Blends)

| | | | |
|---|---|---|---|
| Grade 1, 58-62 437 E. P. | 5¾- 6 | 6 - 6¼ | 6 - 6¼ |
| Grade 2, 58-62 450 E. P. | 5¾- 6 | 6 - 6¼ | 6 - 6¼ |

## BURNING OILS

| PENNSYLVANIA | | | |
|---|---|---|---|
| 45 Water White | 7 - 7¼ | 7¼- 7½ | 7¼- 7½ |
| 46 Water White | 7½- 7¾ | 7¾- 8 | 7¾- 8 |
| 47 Water White | 8 - 8½ | 8¼- 8½ | - 8½ |
| 300 Burning Oil | 7¾- 8 | 7½- 7¾ | 7½- 8 |
| **OKLAHOMA** | | | |
| 41-43 Water White | 4½- 4¾ | 4½- 4¾ | 4¼- 4½ |
| 42-44 Water White | 4¾- 4¾ | 4¾- 5 | 4½- 4¾ |
| 45-47 Distillate 520 E. P. | 5¾- 6¼ | 5¾- 6¼ | 5¾- 6¼ |
| 46-48 Distillate 500 E. P. | 6¼- 6¾ | 6¼- 6¾ | 6¼- 6¾ |
| **NORTH TEXAS** | | | |
| 40-42 Prime White Distillate | 4 - 4¼ | 4 - 4¼ | 3¾- 4 |
| 41-43 Water White Kerosene | 4½- 4¾ | 4¼- 4½ | 4¼- 4½ |
| **NORTH LOUISIANA** | | | |
| 41-43 Water White Kerosene | 4½- 4¾ | 4½- 4¾ | 4½- 4¾ |
| **ARKANSAS** | | | |
| 41-43 Water White Kerosene | 4½- 4¾ | 4½- 4¾ | 4½- 4¾ |
| 42-44 Water White Kerosene | 4¾- 5 | 4¾- 5 | 4¾- 5 |

**Above prices are f o. b. refinery in tank car. They are the average at which the bulk of the products on the open market move. Whoever has knowledge of any prices on any considerable quantity different than above will favor us with this information.**

# Light Oil Products Holding Firm; Heavy Ends Slip

CHICAGO, Nov. 24.—Seven cents a gallon is the price being quoted by Chicago sales offices of major refining interests when inquiry is received for Navy gasoline. The jobbers, however, are not paying 7 cents for much of their material. They are paying 6½ cents for a considerable volume of it although the trade has been solicited by mail pretty freely for business at 6¼. The quotation of 6¼ cents is not a fair picture of the Chicago market as most of the trading is at 6½.

Volume of gasoline business is quite satisfactory this week. The weather has been pleasant and the roads dry so that motoring has continued without apparent slackening since October. The fall has been a dry one in the Ohio river valley where wet weather and muddy roads usually slow up gallonage long before this part of the fall. That dryness has kept the volume up, but several refiners who joined the ranks of those quoting 7 cents a gallon early in the week have since been obliged to return to a level ½ cent below.

Kerosene is still 4½ cents. At present the strength of the commodity is attributable chiefly to its scarcity, for the demand has fallen off greatly since the first of this week. It is believed that the export demand has about been satisfied for the present, bcause kerosene movement was slow Thursday and Friday.

The domestic distillate market is not what it was two weeks ago, but the products is still moving well. The mild weather has done a great deal to slow the market. Refiners also have increased the supply by enlarging their output of the one active product in the oil line. The price has reacted somewhat to the cut in crude oil two weeks ago but it required some time for the reaction to set in. The crude cut came when the market was most active and the demand strongest but it is given credit for he'ping the weather halt the rapid upward movement of the price. Now the low price on furnace oil is 3 cents.

Gas oil prices can not struggle back to 2½ cents, apparently. Gas companies, both large and small, are taken care of on contracts as a rule. These contracts are similar to fuel oil contracts and are based on the medium grade of Mid-Continent crude oil, usually about 70 per cent. That puts the spot price at about 95 cents a barrel and the contract price 70 cents.

Fuel oil prices keep going down also. Fuel from Oklahoma of 24-26 Gravity can be had for less than 70 cents now and there is apparently little chance for it to recover right away. The large volume of El Dorado refinery fuel at 62½ cents a barrel and a similar quantity of Smackover crude fuel at 55 cents, is a strong bearish element in the market.

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FORT WORTH, Nov. 24.—Paul Roessner, of this city, is expecting to form a company to open the refinery at Sweetwater, Tex., which has been closed down for some time.

# Talk with Any Sewell User

***Get the Facts First-Hand—Then You Will Surely Take Advantage Of This Basic Motor Truck Economy***

For your own benefit, you should realize that any truck operator who does not use the protecting resiliency of Sewell Cushion truck wheels, is actually losing several hundreds of dollars a year.

Find out just what the importance of Sewell Wheels to motor truck economy is. Make it a point to talk with truck operators who have equipped with Sewell Wheels. Get their experience first-hand.

Then you will learn exactly why Sewell Wheels, with their double resiliency, will save you several hundreds of dollars a year on motor trucks you operate.

Sewell Cushion Wheels accomplish these definite results: 1st, They cut down repair and replacement expense as much as one-half; 2nd, They increase tire mileage, on the average from 50 to 100 percent; 3rd, They keep the truck out of the garage and on the road, greatly reducing "time out" for repairs; 4th, They add as much as two years to a truck's life.

**The Resiliency is built in the wheel**

It is the Rubber Flange Construction of Sewell Wheels that DOUBLES the resiliency of the live rubber cushion through years of service.

It is this Rubber Flange Construction that gives Sewell Wheels the REQUIRED DEGREE of resiliency for FULL protection of truck and tires from road jars.

It is significant that not only operators of one or two trucks, but the largest fleet operators as well, are insistent upon the use of Sewell Cushion Wheels. You may be absolutely sure that when great corporations, which manage their traffic upon a sound business basis, invest fifty, seventy, and even ninety thousand dollars in Sewell Wheels, that this equipment means genuine motor truck economy in the long run.

Satisfy yourself, however, beyond any possibility of a doubt, by talking with one or more Sewell Cushion Wheel users in your community. We believe you will find them quite willing to tell you all about Sewell Cushion Wheels, and the money they save.

## Sewell Cushion Wheel Company

**Detroit**

New York Philadelphia Pittsburgh Chicago San Francisco

Representatives in Leading Industrial Centers

# Sewell Cushion Wheels

# Refinery Markets On Lubricants, Heavy Oils

**Pennsylvania, Oklahoma, North and South Texas, Louisiana, Arkansas**

## NEUTRAL OILS

| PENNSYLVANIA | Prices Nov. 26 | Prices Nov. 19 | Prices Nov. 12 |
|---|---|---|---|
| **(Viscous Test 70)** | | | |
| 200 Vis. No. 3 Assoc. Filt. | -26 | 25 -26 | 25½-26 |
| 180 Vis. No. 3 Assoc. Filt. | -24 | 23 -24 | 23½-24 |
| 150 Vis. No. 3 Assoc. Filt. | -21 | 20 -21 | 20½-21 |
| **(Non-Viscous)** | | | |
| 34 350-360 Flash | 7½- 7¾ | 7½- 7¾ | - 8 |
| 36 Miners Neutrals 300-305 Flash | 7 - 7¼ | 7 - 7¼ | - 7½ |
| **OKLAHOMA** | | | |
| **(Viscous Test 100)** | | | |
| 70 Vis. at 100°F. No. 2 color | 3¾- 4¼ | 3¾- 4¼ | 3¾- 4¼ |
| 70 Vis. at 100°F. No. 2½-3 color | 3½- 4 | 3½- 4 | 3½- 4 |
| 100 Vis. at 100°F. No. 2 color | 4¾- 5¼ | 4½- 5 | 4½- 5 |
| 100 Vis. at 100°F. No. 2½-3 color | 4½- 5 | 4¼- 4¾ | 4¼- 4¾ |
| 150 Vis. at 100°F. No. 3 color | 9½-10 | 9½-10 | 9½-10 |
| 150 Vis. at 100°F. No. 4 color | 9 - 9¼ | 9 - 9½ | 9 - 9½ |
| 180 Vis. at 100°F. No. 3 color | 12 -12½ | 12 -12½ | 12 -12½ |
| 180 Vis. at 100°F. No. 4 color | 11¼-11¾ | 11¼-11¾ | 11¼-11¾ |
| 180 Vis. at 100°F. No. 5 color | 10½-11 | 10½-11 | 10½-11 |
| 180 Vis. at 100°F. No. 6 color | 9¾-10¼ | 9¾-10¼ | 9¾-10¼ |
| 200 Vis. at 100°F. No. 3 color | 13 -13½ | 13 -13½ | 13 -13½ |
| 200 Vis. at 100°F. No. 4 color | 12¼-12¾ | 12¼-12¾ | 12¼-12¾ |
| 200 Vis. at 100°F. No. 5 color | 11½-12 | 11½-12 | 11½-12 |
| 200 Vis. at 100°F. No. 6 color | 10¾-11¼ | 10¾-11¼ | 10¾-11¼ |
| 220 Vis. at 100°F. No. 3 color | 14 -14½ | 14 -14½ | 14 -14½ |
| 220 Vis. at 100°F. No. 4 color | 13¼-13¾ | 13¼-13¾ | 13¼-13¾ |
| 220 Vis. at 100°F. No. 5 color | 12½-13 | 12½-13 | 12½-13 |
| 220 Vis. at 100°F. No. 6 color | 11¾-12¼ | 11¾-12¼ | 11¾-12¼ |
| 240 Vis. at 100°F. No. 3 color | 15 -15¼ | 15 -15½ | 15 -15½ |
| 240 Vis. at 100°F. No. 4 color | 14¼-14¾ | 14¼-14¾ | 14¼-14¾ |
| 240 Vis. at 100°F. No. 5 color | 13½-14 | 13½-14 | 13½-14 |
| 240 Vis. at 100°F. No. 6 color | 12 -13¼ | 12¾-13¼ | 12¾-13¼ |
| 280 Vis. at 100°F. No. 3 color | 17½-18 | 17½-18 | 17½-18 |
| 280 Vis. at 100°F. No. 4 color | 16½-17 | 16½-17 | 16½-17 |
| 280 Vis. at 100°F. No. 5 color | 15½-16 | 15½-16 | 15½-16 |
| 280 Vis. at 100°F. No. 6 color | 14½-15 | 14½-15 | 14½-15 |
| 300 Vis. at 100°F. No. 6 color | 14¾-15¼ | 15 -15½ | 15 -15½ |
| **SOUTH TEXAS** **(Viscous Test 100; cold test 0)** | | | |
| 100 Vis. No.2 Color Unfilt. Pale | 7 - 8 | 7 - 8 | 7 - 8 |
| 150 Vis. No.2½ Color Unfilt. Pale | 9½-10½ | 9½-10½ | 9½-10½ |
| 200 Vis. No.3 Color Unfilt. Pale | 11 -12 | 11 -12 | 11 -12 |
| 300 Vis. No.3 Color Unfilt. Pale | 13 -14 | 13 -14 | 13½-14½ |
| 500 Vis. No.3½ Color Unfilt. Pale | 15 -16 | 15 -16 | 15 -16 |
| 750 Vis. No.4 Color Unfilt. Pale | 21 -22 | 21 -22 | 21 -22 |
| 200 Vis. No.2 Filt. Pale | -23 | -23 | -23 |
| 300 Vis. No.2 Color Filt. Pale | -26 | -26 | -26 |
| 500 Vis. No.2½ Color Filt. Pale | -29 | -29 | -29 |
| 750 Vis. No.2½ Color Filt. Pale | -39 | -39 | -39 |
| 200 Vis. No.5½ Color Red Oil | 9½-10½ | 9½-10½ | 9½-10½ |
| 300 Vis. No.5½ Color Red Oil | 11½-12½ | 11½-12½ | 11½-12½ |
| 500 Vis. No.6 Color Red Oil | 13½-14½ | 13½-14½ | 13½-14½ |
| 750 Vis. No.6 Color Red Oil | 19½-20½ | 19½-20½ | 19½-20½ |

## CYLINDER OILS

| PENNSYLVANIA | Prices Nov. 26 | Prices Nov. 19 | Prices Nov.12 |
|---|---|---|---|
| 600 Steam Refined | 11½-12 | 11 -11½ | 11 -11½ |
| 635 Steam Refined | 13½-14 | 13¼-13¾ | 13 -13½ |
| 650 Steam Refined | -15 | 14½-15 | 14½-15 |
| 600 Flash | -17 | 16½-17 | 16½-17 |
| 600 Warren E | -16½ | -16½ | 16 -16½ |
| 600 Oil City E | -15½ | -14½ | -14½ |
| 600 Filtered D | -21 | -21 | -21 |
| Cold Test Stocks (bright filtered) | 32 -34 | 31 -32 | -33 |
| Cold Test Stock (dark filtered) | 30 -31 | 29 -30 | -31 |
| Black Oil | - 6 | - 6 | |
| **OKLAHOMA** | | | |
| Bright Filtered Stock | 26 -31 | 26 -31 | 26 -33 |
| Medium Filtered Stock | -16 | -16 | 16 -16½ |
| 600 Steam Refined Olive Green | 4¾- 5¼ | 4¾- 5¼ | 5¼- 5¾ |
| 600 Steam Refined Dark Green | 3¾- 4¼ | 3¾- 4¼ | 4¼- 4¾ |
| Black Oil | 3 - 3½ | 3 - 3¼ | 3½- 3¾ |

## WAX

| PENNSYLVANIA | | | |
|---|---|---|---|
| **(Per Pound New York)** | | | |
| 122-124 White Crude Scale | - 3¼ | 3 - 3¼ | 3 - 3¼ |
| 124-126 White Crude Scale | 3¼- 3½ | 3¼- 3½ | 3¼- 3½ |
| **OKLAHOMA** | | | |
| **(Per Pound Group 3)** | | | |
| 124-126 White Crude Scale | 2¾- 2¾ | 2¾- 2¾ | 2¾- 2¾ |

## FUEL OIL

| PENNSYLVANIA | | | |
|---|---|---|---|
| 36-40 Fuel Oil | 5¼- 5¾ | 5½- 6¾ | 5¾- 6 |
| 30-34 Fuel Oil | 4¾ - 5 | 5 - 5¼ | - 5½ |
| **OKLAHOMA** | | | |
| 40-42 Prime White Dist. | 4 - 4¼ | 4 - 4¼ | 3¾- 4 |
| 38-40 Straw Distillate | 3 - 3¼ | 3 - 3¼ | 3 - 3¼ |
| 36-38 Straw Distillate | 2¾- 3 | 2¾- 3 | 2¾- 3 |
| 32-36 Gas Oil (Gal.) | 2¼- 2½ | 2¼- 2½ | 2¼- 2½ |
| 24-26 Fuel Oil (bbl.) | 67½-72½ | 70-.75 | 72½-.77½ |
| Fuel Oil, buyers, cars (bbl.) | .62½-.67½ | .65-.70 | .70- .75 |
| **NORTH TEXAS** | | | |
| 38-40 Straw Distillate | 3 - 3½ | 3 - 3¼ | 2¾- 3 |
| 32-36 Gas Oil (gal.) | 2½- 2½ | 2¼- 2¾ | 2¼- 2½ |
| 24-26 Fuel, per bbl | .60-.70 | .60-.70 | .65-.70 |
| South Texas Fuel | 1.05-1.15 | 1.05-1.15 | 1.05-1.15 |
| South Texas Gas Oil | 2½- 2¾ | 2½- 2¾ | 2½- 2¾ |
| **NORTH LOUISIANA** | | | |
| 32-36 Gas Oil (Gal.) | 3 - 3¼ | 2¼- 3 | 2¼- 2¾ |
| 22-26 Fuel Oil (bbl.) | .60-.70 | .60-.70 | .65-.70 |
| **ARKANSAS** | | | |
| 38-40 Distillate | 3 - 3¼ | 3 - 3¼ | 3 - 3¼ |
| 32-36 Gas Oil | 2½- 2¾ | 2½- 2¾ | 2½- 2¾ |
| 22-26 Refinery Fuel Oil | .60- .70 | .60- .70 | .60- .70 |

Above prices are f. o. b. refinery in tank car. They are the average at which the bulk of the products on the open market move. Whoever has knowledge of any prices on any considerable quantity different than above will favor us with this information.

# Pennsylvania Lubes Are Buoyant; Kerosene Demand Easier

CLEVELAND, Nov. 26.—Pennsylvania lubricating oils are buoyant. Stocks are scarce and some grades can be procured only after considerable shopping around the leading refining centers. Prices are generally higher than a week ago and if present demand holds up more active grades will undoubtedly command better prices.

Steam refined stocks are almost exhausted and deliveries can be made by a considerable number of refiners only from current runs. Filtered stocks are also quite active and a scarcity of Oil City E is reported. Price of this oil has advanced 1-cent over the week.

Cold test stocks are beginning to show a little more life. Bright stocks have advanced 1 to 2 cents, those with lower pour test now being quoted at 34 cents while those of higher pour test are quoted at 32 and 33.

Buying of neutrals started to increase last Wednesday and since then the tone of the market has improved steadily. Quotations are now firm and were uniform today for the first time in months. After a slump the middle of last week, non-viscous neutrals are now back to the level that obtained a week ago.

Demand for kerosene is less brisk and prices are consequently easier. Fuel oil also is softer as demand has slackened. Both straight run and blended gasolines are quiet although the heavier grades of straight run motor fuels were a little more active late last week after several days of fair weather with moderate temperatures in the territory supplied by western Pennsylvania refiners.

Parraffin wax is more active and prices have been advanced fractionally.

### Kentucky

Kentucky markets are showing no further signs of weakening. All products are moving well and no stocks are accumulating. High test gasolines are still scarce as some of the larger plants are sold up. Kerosene continues in fair demand and both fuel and gas oils have shown some improvement.

Quotations at central Kentucky plants are: gasoline—58-60, 8½ cents; 60-62, 10½; 62-64, 11½; 64-66, 12¼; 66-68, 13, and 68-70, 13¾ cents. Kerosene, 6½; 38-40 gas, 4⅜; 34-40 gas 4; 24-26 fuel 3⅛; 26-30 fuel, 3½, and 30-32, 3¾.

In the Cincinnati district 58-60 is quoted at 9¾ cents and fuel oil at 4½. At Louisville 24-26 fuel is quoted at 3¼ cents. Louisville refiners report a heavy demand for kerosene and gas oil coming from the use of domestic oil burners and gas companies.

*To the front with a rush—*

# TAGOLENE

THE UTMOST IN LUBRICATION

**Tagolene is firmly established as the major offering of enterprising jobbers, and has been readily accepted by motorists everywhere.**

**The Reason**

**—effective, co-operative resale effort, based upon distinctive and individual quality.**

**Skelly Oil Company**

**El Dorado, Kansas**

# Tank Wagon, Service Station Markets

## Gasoline and Kerosene

BELOW are given in cents a gallon, the tank wagon price of gasoline without the special taxes levied against motor fuels by many states, the amount of the state taxes, the total tank wagon price, with tax added in and the service station or retail price of gasoline as quoted in the various Standard Oil marketing territories. The right hand column is the tank wagon price of kerosene. By tank wagon price is meant the price to resale agents or dealers. Usually this price does not apply to sales to consumers from tank wagons.

**Prices in effect Nov. 26**

### S. O. NEW JERSEY TERRITORY

| | Gasoline | | | | Oil |
|---|---|---|---|---|---|
| | T.W. | Tax | Total | S.S. | T.W. |
| Atlantic City, N. J. | 15.5 | 0 | 15.5 | * | 14 |
| Newark, N. J. | 15.5 | 0 | 15.5 | * | 14 |
| Annapolis, Md. | 15 | 1 | 16 | * | 14 |
| Baltimore, Md. | 15 | 1 | 16 | 19 | 13 |
| Cumberland, Md. | 15 | 1 | 16 | 19 | 15 |
| Washington, D. C. | 15 | 0 | 15 | 18 | 13.5 |
| Danville, Va. | 15 | 3 | 18 | * | 15 |
| Norfolk, Va. | 15 | 3 | 18 | 21 | 13 |
| Richmond, Va. | 15 | 3 | 18 | 21 | 13.5 |
| Roanoke, Va. | 15 | 3 | 18 | 21 | 15 |
| Petersburg, Va. | 15 | 3 | 18 | * | 14.5 |
| Charleston, W. Va. | 15 | 2 | 17 | 20 | 13.5 |
| Clarksburg, W. Va. | 15 | 2 | 17 | * | 14.5 |
| Keyser, W. Va. | 15 | 2 | 17 | * | 15 |
| Parkersburg, W. Va. | 15 | 2 | 17 | * | 12 |
| Wheeling, W. Va. | 15 | 2 | 17 | 20 | 13.5 |
| Williamson, W. Va. | 15 | 2 | 17 | * | 15 |
| Charlotte, N. C. | 15 | 3 | 18 | 21 | 14.5 |
| Hickory, N. C. | 15 | 3 | 18 | * | 15 |
| High Point, N. C. | 15 | 3 | 18 | * | 15 |
| Mt. Airy, N. C. | 15 | 3 | 18 | * | 14.5 |
| Salisbury, N. C. | 15 | 3 | 18 | * | 15 |
| Charleston, S. C. | 15 | 3 | 18 | 21 | 12.5 |
| Columbia, S. C. | 15 | 3 | 18 | 21 | 14.5 |

*Dealers set own prices. S. O. New Jersey does not operate station.

### S. O. NEW YORK TERRITORY

| | | | | | |
|---|---|---|---|---|---|
| *New York City | 15.5 | 0 | 15.5 | 18 | 15 |
| Albany, N. Y. | 15.5 | 0 | 15.5 | 18 | 14 |
| Buffalo, N. Y. | 14 | 0 | 14 | 17 | 15 |
| Rochester, N. Y. | 15 | 0 | 15 | 19 | 13 |
| Syracuse, N. Y. | 15 | 0 | 15 | 17 | 13 |
| Boston, Mass. | 14.5 | 0 | 14.5 | 17 | 14 |

*In steel barrels.

### ATLANTIC REFINING TERRITORY

| | | | | | |
|---|---|---|---|---|---|
| Pittsburgh, Pa. | 15 | 0 | 15 | 20* | 14 |
| Philadelphia, Pa. | 15 | 0 | 15 | 20* | 14 |
| Allentown, Pa. | 14 | 0 | 14 | 19* | 14 |
| Scranton, Pa. | 15 | 0 | 15 | 20* | 14 |
| Altoona, Pa. | 15 | 0 | 15 | 20* | 14 |
| Dover, Del. | 15 | 1 | 16 | 19 | 14 |
| Wilmington, Del. | 15 | 1 | 16 | 19 | 14 |
| Providence, R. I. | 15 | 0 | 15.5 | 18 | 14 |
| Springfield, Mass. | 14.5 | 0 | 14.5 | 17 | 14 |
| Worcester, Mass. | 14.5 | 0 | 14.5 | 17 | 14 |
| Hartford, Conn. | 15.5 | 1 | 16.5 | 19 | 14 |
| New Haven, Conn. | 15.5 | 1 | 16.5 | 19 | 14 |
| Boston, Mass. | 14.5 | 0 | 14.5 | 17 | 14 |

Last six cities are Atlantic's chief marketing points in New England. S. O. New York markets there also.

*Contains 2-cent tax collected by dealer and paid by him directly to state.

### S. O. OHIO TERRITORY

| | | | | | |
|---|---|---|---|---|---|
| All Ohio points | 16 | 0 | 16 | 18 | 13 |

### S. O. KENTUCKY TERRITORY

| | | | | | |
|---|---|---|---|---|---|
| Lexington, Ky. | 14 | 1 | 15 | 17 | 14 |
| Louisville, Ky. | 13 | 1 | 14 | 16 | 13 |
| Covington, Ky. | 15 | 1 | 16 | 18 | 13 |
| Clarksdale, Miss. | 13 | 1 | 14 | 16 | 14 |
| Jackson, Miss. | 13 | 1 | 14 | 16 | 12 |
| Natchez, Miss. | 12.5 | 1 | 13.5 | 15.5 | 13.5 |
| Vicksburg, Miss. | 12.5 | 1 | 13.5 | 15.5 | 13.5 |
| Birmingham, Ala. | 14 | 2 | 16 | 18 | 15.5 |
| Mobile, Ala. | 13 | 2 | 15 | 17 | 13.5 |
| Montgomery, Ala. | 14 | 2 | 16 | 18 | 16 |
| Atlanta, Ga. | 13 | 3 | 16 | 18 | 14 |
| Augusta, Ga. | 15 | 3 | 18 | 20 | 15 |
| Macon, Ga. | 15 | 3 | 18 | 20 | 15.5 |
| Savannah, Ga. | 13 | 3 | 16 | 18 | 14 |
| Jacksonville, Fla. | 13 | 3 | 16 | 18 | 14 |
| Miami, Fla. | 15 | 3 | 18 | 20 | 15.5 |
| Tampa, Fla. | 13 | 3 | 16 | 18 | 14 |
| Pensacola, Fla. | 13 | 3 | 16 | 18 | 14.5 |

### S. O. CALIFORNIA TERRITORY

| | | | | | |
|---|---|---|---|---|---|
| Phoenix, Ariz. | 16 | 3 | 19 | 22 | 21.5 |
| Los Angeles, Cal. | 10 | 2 | 12 | 15 | 15.5 |
| Fresno, Cal. | 11.5 | 2 | 13.5 | 16.5 | 17.5 |
| San Francisco, Cal. | 11 | 2 | 13 | 16 | 15.5 |
| Reno, Nev. | 14.5 | 2 | 16.5 | 19.5 | 19 |
| Portland, Ore. | 12 | 3 | 15 | 18 | 16.5 |
| Seattle, Wash. | 12 | 1 | 13 | 16 | 16.5 |
| Spokane, Wash. | 16 | 1 | 17 | 20 | 20.5 |
| Tacoma, Wash. | 12 | 1 | 13 | 16 | 16.5 |

### S. O. LOUISIANA TERRITORY

| | | Gasoline | | | Oil |
|---|---|---|---|---|---|
| | T.W. | Tax | Total | S.S. | T.W. |
| Camden, Ark. | 13.5 | 3 | 16.5 | 18.5 | 13 |
| Little Rock, Ark. | 13.5 | 3 | 16.5 | 18.5 | 13 |
| West Helena, Ark. | 13.5 | 3 | 16.5 | 18.5 | 13 |
| Alexandria, La. | 12.5 | 1 | 13.5 | 15.5 | 13 |
| Baton Rouge, La. | 11 | 1 | 12 | 14 | 11.5 |
| Lake Charles, La. | 12.5 | 1 | 13.5 | 15.5 | 13 |
| New Orleans, La. | 11.5 | 1 | 12.5 | 14.5 | 12 |
| Shreveport, La. | 12.5 | 1 | 13.5 | 15.5 | 13 |
| Bristol, Tenn. | 15 | 2 | 17 | 19 | 15.5 |
| Chattanooga, Tenn. | 13.5 | 2 | 15.5 | 17.5 | 14.5 |
| Knoxville, Tenn. | 14.5 | 2 | 16.5 | 18.5 | 15 |
| Nashville, Tenn. | 13.5 | 2 | 15.5 | 17.5 | 14.5 |
| Memphis, Tenn. | 13 | 2 | 15 | 17 | 14 |

### MAGNOLIA PETROLEUM TERRITORY

| | | | | | |
|---|---|---|---|---|---|
| Muskogee, Okla. | 9 | 1 | 10 | 12 | 9 |
| Oklahoma City | 12 | 1 | 13 | 16 | 9 |
| Tulsa, Okla. | 8 | 1 | 9 | 12 | 9 |
| Fort Smith, Ark. | 12 | 3 | 15 | 18 | 12 |
| Little Rock, Ark. | 12 | 3 | 15 | 18 | 13 |
| Texarkana, Ark. | 12 | 3 | 15 | 18 | 12 |
| Dallas, Tex. | 6 | 1 | 7 | 10 | 8 |
| El Paso, Tex. | 11 | 1 | 12 | 15 | 12 |
| Fort Worth, Tex. | 6 | 1 | 7 | 9 | 10 |
| Houston, Tex. | 13 | 1 | 14 | 18 | 11 |
| San Antonio, Tex. | 6 | 1 | 7 | 10 | 9 |

### S. O. INDIANA TERRITORY

| | | | | | |
|---|---|---|---|---|---|
| Chicago, Ill. | 12 | 0 | 12 | 14 | 10 |
| Decatur, Ill. | 12.2 | 0 | 12.2 | 14.2 | 10.5 |
| East St. Louis, Ill. | 11.1 | 0 | 11.1 | 13.35 | 9.6 |
| Joliet, Ill. | 12.4 | 0 | 12.4 | 14.4 | 10.7 |
| Peoria, Ill. | 12.2 | 0 | 12.2 | 14.2 | 10.5 |
| Quincy, Ill. | 12.2 | 0 | 12.2 | 14.2 | 10.3 |
| Evansville, Ind. | 12 | 2 | 14 | 16 | 10.5 |
| Indianapolis, Ind. | 12.2 | 2 | 14.2 | 16.2 | 10.7 |
| South Bend, Ind. | 12.4 | 2 | 14.4 | 16.4 | 10.9 |
| Detroit, Mich. | 10.8 | 0 | 10.8 | 12.8 | 11.2 |
| Grand Rapids, Mich. | 12.7 | 0 | 12.7 | 14.7 | 11.1 |
| Saginaw, Mich. | 12.9 | 0 | 12.9 | 14.9 | 11.3 |
| La Crosse, Wis. | 13.2 | 0 | 13.2 | 15.2 | 11.4 |
| Madison, Wis. | 12.3 | 0 | 12.3 | 14.3 | 10.5 |
| Milwaukee, Wis. | 12 | 0 | 12 | 14 | 10.2 |
| Duluth, Minn. | 13.2 | 0 | 13.2 | 15.2 | 11.6 |
| Mankato, Minn. | 12.8 | 0 | 12.8 | 14.8 | 11.4 |
| Minneapolis, Minn. | 12.9 | 0 | 12.9 | 14.9 | 11.6 |
| Davenport, Ia. | 12.5 | 0 | 12.5 | 14.5 | 10.9 |
| Des Moines, Ia. | 12.5 | 0 | 12.5 | 14.5 | 10.9 |
| Sioux City, Ia. | 12.0 | 0 | 12 | 14 | 10.5 |
| Kansas City, Mo.* | 10.9 | 1 | 11.9 | 13.9 | 9.3 |
| St. Joseph, Mo.** | 11.8 | .5 | 12.3 | 14.3 | 10.2 |
| St. Louis, Mo. | 11.6 | 0 | 11.6 | 13.9 | 10 |
| Fargo, N. D. | 14.9 | 1 | 15.9 | 17.9 | 13.6 |
| Grand Forks, N. D. | 15.2 | 1 | 16.2 | 18.2 | 13.9 |
| Minot, N. D. | 14.9 | 1 | 15.9 | 17.9 | 13.6 |
| Huron, S. D. | 14 | 2 | 16 | 18 | 12.1 |
| Pierre, S. D. | 14 | 2 | 16 | 18 | 12.1 |
| Wichita, Kan. | 11.8 | 0 | 11.8 | 13.8 | 9.8 |
| Bartlesville, Okla. | 10.9 | 1 | 11.9 | 13.9 | 8 |

*Kansas City tax of 1 cent imposed by city.
**St. Joseph tax of ½ cent imposed by city.

### S. O. NEBRASKA TERRITORY

| | | | | | |
|---|---|---|---|---|---|
| Crawford, Neb. | 13 | 0 | 13 | * | 11.25 |
| Omaha, Neb. | 12.25 | 0 | 12.25 | 14.25 | 10.5 |
| McCook | 13.75 | 0 | 13.75 | 15.75 | 12 |
| Norfolk | 12.75 | 0 | 12.75 | 14.75 | 11 |
| North Platte | 13.75 | 0 | 13.75 | 15.75 | 11.75 |
| Scotts Bluff | 13.25 | 0 | 13.25 | 15.25 | 11.25 |

*Standard has no service station here.

### CONTINENTAL OIL TERRITORY

| | | | | | |
|---|---|---|---|---|---|
| Denver, Colo. | 11 | 2 | 13 | 15 | 12.5 |
| Glenwood Sp'gs. Colo. | 18 | 2 | 20 | * | 16.5 |
| Pueblo, Colo. | 14 | 2 | 16 | 18 | 12.5 |
| Basin, Wyo. | 15 | 1 | 16 | * | 13 |
| Casper, Wyo. | 13 | 1 | 14 | 16 | 11 |
| Cheyenne, Wyo. | 14.5 | 1 | 15.5 | 17.5 | 13 |
| Cody, Wyo. | 16 | 1 | 17 | * | 14 |
| Lander, Wyo. | 15 | 1 | 16 | * | 13 |
| Sheridan, Wyo. | 17 | 1 | 18 | 20 | 15 |
| Billings, Mont. | 16.5 | 2 | 18.5 | 20.5 | 14.5 |
| Butte, Mont. | 18 | 2 | 20 | 22 | 15 |
| Great Falls, Mont. | 18 | 2 | 20 | 22 | 16 |
| Helena, Mont. | 18 | 2 | 20 | 22 | 16 |
| Miles City, Mont. | 17.5 | 2 | 19.5 | 21.5 | 15.5 |
| Ogden, Utah | 16.5 | 2.5 | 19 | 21 | 15.5 |
| Salt Lake City, Utah. | 15.5 | 2.5 | 18 | 20 | 15.5 |
| Boise, Ida. | 18 | 2 | 20 | 22 | 18 |
| Albuquerque, N. M. | 17 | 1 | 18 | 20 | 15.5 |

*Continental has no service stations at these points.

## Local Price Wars Cease; Small Cut Made

CHICAGO, Nov. 21.—Effective Nov. 14, Standard Oil Co. of Indiana reduced the tank wagon price of gasoline 0.1 cent at Sioux City, Ia. That does not sound very important but it saves the service station help a lot of mental arithmetic in this case because it reduces the price to even cents per gallon.

**National Petroleum News** extended premature congratulations to the pump boys in East St. Louis last week, in this column. The tank wagon price was changed from 12.85 to 11.1 which does not help a great deal in view of the fact the service station price is now 13.35 instead of 15.1 as formerly. The dealers' differential in East St. Louis is 2¼ cents regularly. The cut was 1¾ cents.

Through an error in transmission the tank wagon quotation for Minot, N. D., was 1 cent too low in the tank wagon table last week. The quotation as it appeared in the issue of Nov. 14 was correct. The gasoline tank wagon price in Minot has been 15.9 cents since the cut of 4½ cents on Nov. 10. That price includes one cent state tax.

Irregular reductions in North Dakota were made. it was said at Standard Oil Co. offices, because some of the company's stations in that region changed their source of supply and thereby enjoy a better freight rate that formerly. This saving in freight is passed on to the public Scattered local price wars have about ended, it is said. In only a few cases has Standard's price been lowered since Nov. 10.

## Tank Wagon Change

CLEVELAND, Nov. 21.—Atlantic Refining Co's. 1-cent gasoline reduction of Nov. 12 extended throughout the New England territory where the company has stations.

* * *

PHILADELPHIA, Nov. 21.—Atlantic Refining Co. reduced gasoline prices 1-cent Nov. 20 in Pennsylvania and Delaware, except at Allentown, Pa., where prices are still below the state level.

* * *

DENVER, Nov. 22.—Continental Oil Co. on Nov. 17 reduced gasoline prices 1 cent at Salt Lake City.

* * *

TULSA, Nov. 26.—Pierce Oil Corp. today advanced kerosene tank wagon prices 1-cent throughout western Oklahoma. Other Independent companies are meeting the advance.

Magnolia Petroleum Co. reduced gasoline tank wagon price 2 cents and service station price 3 cents Nov. 21 at Muskogee and both prices 2 cents at Tulsa, Nov. 22.

* * *

ROCHESTER,, N. Y., Nov. 26.—Standard Oil Co. of New York's gasoline prices in Rochester are 15 cents tank wagon and 19 cents service station. Independent's tank wagon price is 13 cents and service station 17 cents. A 4-cent differential has existed since August.

# Fall In Exchange Rates Retards Petroleum Export Market

By Special Correspondent

NEW YORK, Nov. 26

UNFAVORABLE foreign exchange developments early last week, coupled with adverse developments in the European political situation, retarded petroleum export buying. Only two cargo sales were reported and both of these were kerosene. Inquiries from abroad were far more numerous than during the previous week but buyers and sellers found much more difficulty in getting together.

One of the cargoes of kerosene called for 35,000 barrels of water and prime white for nearby shipment out of the Gulf to England while the other called for 30,000 barrels of the same grades for January shipment to France. Prices were not made public. German buyers are inquiring for kerosene more actively but are compelled to confine their purchases to small quantities due to the money situation in that country. Local refiners are quite optimistic regarding the outlook, and the concensus of opinion is that there will be a marked improvement in the movement into export channels if the bulge in foreign exchange which developed late in the week, continues. Japanese and Chinese buyers were again inquiring for cased kerosene but actual demand lagged. However, the belief prevails that sooner or later these interests will be forced into the market for large quantities. The tank wagon market for kerosene is buoyant and advances in both domestic and export prices are looked for during the next week or two.

### Price Structure Weak

Gasoline export prices are tending lower. There were rumors of the sale of 45,000 barrels current but confirmation was lacking. One of the leading refiners is asking 7¾ cents for Navy and 10¾ cents for 64 at the Gulf but on a firm bid these prices could have been shaded at least ¼ cent. Export business was confined to very small quantities.

British buyers have been purchasing very little gasoline of late and most of the oil being shipped to England has been on consignment. French buyers are considered the best prospects at present, as stocks in that country are not very large. However, inquiries from this source have been for large quantities at prices considerably below the views of leading refiners. Scandinavian buyers showed little or no interest in the gasoline market, while German buyers also appeared disinterested.

The reduction of 10 cents a barrel in the price of bunker oil failed to attract export buyers, and the market remained dull at $1.35 per barrel f.o.b. New York harbor refinery with the bulk of shipments against standing contracts. Stocks of spot oil are large. The lighter fuel oils were easier but no changes of consequence took place. There was a rumor current of another bulk sale of 35,000 barrels of 26-28 gas oil at 2⅝ cents Gulf, but confirmation was lacking. However, the inquiry from northern European consumers, has been mor active and Dutch buyers are expected to purchase considerable of this oil soon. A good deal of the oil purchased by Dutch buyers of late is said to be finding its way into Germany.

### Pennsylvania Oils Firmer

A lot of small lot business has been transacted in lubricating oils of late. Pennsylvania grades are firmer regardless of the recent cut in crude and 600 steam refined is well held at 20 cents in barrels New York. There is little available below this price, in fact some refiners are asking as high as 22 cents. The paraffin oils are moving in a larger way. Bright stocks are holding up well. Reports from the Continent indicate that there is not a great deal of high grade lubricating oil available in any of the leading distributing centers.

Quite a little trading has developed in the list of waxes the past few days and prices are somewhat stiffer than a week ago. Export demand has looked up more than expected. British buyers are purchasing sizable quantities of crude scale. Local sellers are asking 3¼ cents for 122-124 A.m.p. while 124-126 is held at 3⅜ cents. Yellow crude scale 124-126 is quoted at 2¾ cents. Match wax, 105-108 A.m.p., is steady at 4 cents. There has been a much better export movement to the Scandinavian and Oriental countries but no price changes to comment upon have been reported. For 111-115 A.m.p. the asking price is 3⅞ cents. Semi-refined 122-124 A.m.p. is held at 3¼ cents Fully refined 118-121 is quotable at 3⅞ cents while 123-125 is unchanged at 4 cents.

### Petrolatums Are Steady

Petrolatums in general are steady but rather quiet. English facial cream manufacturers are more keenly interested in the domestic market and inquiries from abroad have been much more numerous of late. Snow white is in better demand at 11½ to 12 cents while there is a fair movement in lily white at 9½ cents although rumors have it that some refiners are willing to do business at 9 cents flat. The cheaper descriptions of petrolatums have been rather dull of late. Amber is quoted at 3½ cents while veterinary is held at 2¾ cents.

Medicinal oils were somewhat easier in tone last week, although no price changes took place. Russian, 885-890, was held at $1.20 per gallon and a fair movement was reported at this price. Domestic 880-885 was nominal at $1.12 per gallon. Export demand for domestic medicinal oils seems to be gaining steadily.

### British Importations

Importations of petroleum into the United Kingdom during the week ended Nov. 5., were unusually light, totaling but 2,445,120 gallons, establishing a new low record for the year. The only arrival at London included 4400 gallons of lubricating oil to Holroyd's Oil & Ceresine Co. from Hamburg. The largest arrival at Liverpool was 42,110 gallons of lubricating oil to the Vacuum Oil Co. from Philadelphia. At Bristol the Anglo-Mexican Petroleum Co. received 1,040,530 gallons of gasoline from Martinez.

At Hull the Shell Marketing Co. received 287,370 gallons of gasoline from Singapore and 285,350 gallons of gasoline from Balik Pappan. At Swansea the National Oil Refineries received 176,437 gallons of crude oil from Abadan.

COLUMBIA, MO., Nov. 23.—The Columbia market has been in bad shape for more than a month, according to Charles E. Procter, manager of the Columbia Oil Co. An Independent company has been selling gasoline at its service station at the tank wagon price. With the one exception, jobbers have been in line with the recognized market.

## New York Market

**The following prices are quoted by eastern seaboard independent refineries on products which are manufactured from Mexican crude transported from Tampico to the refinery by tanker and from California crude.**

| | Nov. 26 |
|---|---|
| *Gasoline (New Navy) gal., Tank Cars | 10 |
| ‡Bunker oil (F.O.B. New York) bbl. | 1.35 |
| Gas Oil (36-40 refinery) gal. | .04-.04¼ |
| †Kerosene, 45-150 W.W.Bulk Del.,N.Y.nom. | .08½ |

*Delivered.
†Nominal.
‡Plus .06½ charge lighterage.

## Export Markets

**Furnished to N. Y. Produce Exchange by big exporting oil companies. No actual sales. Record for statistical purposes only.**

**Illuminating Oils**

| | Nov. 26 | Nov. 19 |
|---|---|---|
| Bulk, gal., Bayonne | 7.00 | 7.00 |
| Barrels, gal., Bayonne, cargo | 14.00 | 14.00 |
| Cases, gal., Bayonne | 16.90 | 16.90 |

Prices for water white oil (150 test) are 1 cent higher than those for standard white.

**Gasoline-Naptha**
(Cents per Gallon)

| | | |
|---|---|---|
| U. S. Navy, dead bulk | 10.50 | 10.50 |
| U. S. Navy, cases | 24.15 | 24.15 |
| Export grade, bulk | 12.00 | 12.00 |
| 63-66 deg. bulk | 14.00 | 14.00 |
| 63-68 deg. bulk | 15.50 | 15.50 |

**Tide Water Oil Company**
(f. o. b. Bayonne)

| | | |
|---|---|---|
| 59-60 deg. bulk | 11.50 | 11.50 |
| 59-61 deg. cases | 24.15 | 24.15 |
| Export grade, Navy Specifications bulk | 10.50 | 10.50 |
| 63-65 deg. bulk | 14.00 | 14.00 |
| 68-72 deg. bulk | 16.50 | 16.50 |

| | Bulk | Barrels | Cases |
|---|---|---|---|
| Standard white 110 | 7.00 | 14.00 | 16.90 |
| Water white 150 | 8.00 | 15.00 | 17.90 |

**The Texas Company**

| | | |
|---|---|---|
| Gasoline, cases | 24.15 | 24.15 |

| Kerosene | Bulk | Barrels | Cases |
|---|---|---|---|
| Standard White | 7.00 | 14.00 | 16.90 |
| Prime White | 7.50 | 14.50 | 17.40 |
| Water White | 8.00 | 15.00 | 17.90 |

# Keener Interest Shown In Chemicals

By Special Correspondent

NEW YORK, Nov. 26.—Few price changes of consequence occurred last week, but there is a much keener buying interest in several of the refiners' and compounders' supplies. Linseed oil, for instance, reflected the strength in flaxseed. Spot raw oil in carlots cooperage basis is still held at 92 cents per gallon or unchanged from the previous week's closing but November-December was advanced 1 cent while January-April went up 2 cents. The demand for linseed oil showed a marked improvement and all indications point towards a steady market for some time to come. Little or no foreign linseed oil has appeared in some time. Soya bean oil was scarce and firm and importers are asking 10¾ cents a gallon in tank cars on spot although on a firm bid for a fair sized quantity business could probably have been done at 10½ cents. Buyers were bidding 10¼ cents.

Animal oils were steady but quiet. Lard oil export demand has looked up a little but the aggregate movement into consuming channels was not large. Neatsfoot oil is steady but rather dull. Oleo oil was in better demand but the call for horse oil was light, and it is reported that business has been done below 7½ cents although confirmation is lacking. Stearine held up fairly well. The fish oils are quiet and without price change. Crude menhaden is still quoted at 50 cents in tanks, factory while light pressed in barrels is held at 65 cents although some are asking 68 cents. Cod and whale oils were more or less neglected.

Chemicals were quiet. Soda is still moving fairly freely but demand is not as spirited as a week ago. Prices, however, are well maintained. The call for caustic soda contracts is active, and both foreign and domestic buyers are more inclined to purchase ahead. Bleaching powder is dull and weak at present prices. There is a report current in local circles, that benzol prices will be advanced after the first of the year.

Sulfuric acid was a dull affair and little or no trading developed in this quarter. The call for silicate of soda has been light and more or less spasmodic.

Locally, the naval stores market was tame. Business was largely restricted to hand-to-mouth quantities and prices for the various descriptions of rosins were easier. Spirits of turpentine in barrels ex yard was held at 94 cents a gallon at the close of the week showing a decline of 2 cents from the previous Saturday. Stocks of turpentine are slightly in excess of the demand. Export buying has been light and routine while local consumption appears to be falling. Jobbers are purchasing more sparingly. Rosin oils are moving in a larger way at u changed prices. There is little incentive to purchase very far ahead but local handlers report a better movement. Tar and pitch ruled quiet.

## Refiners' and Jobbers' Supplies

**Following are the average market prices for the week on the principal materials used by refiners and jobbers, f.o.b. shipping point as effective this date.**

***Benzol**

| | | Nov. 26 | Nov. 19 |
|---|---|---|---|
| Pure Water White, Tanks | gal. | —.23–28 | 23–28 |
| Drums | gal. | —.28–33 | 28–33 |
| 90% Tanks | gal. | —.21–26 | 21–26 |
| Drums | gal | —.26–31 | 26–31 |

**Refiners' Supplies**

| | | | |
|---|---|---|---|
| Soda Ash light 58% | cwt. | $1.38–1.50 | $1.38–1.50 |
| Silicate of Soda 60 deg. | Bbls. cwt. | –1.70 | –1.70 |
| Sal. Soda wks. | cwt. | 1.10–1.30 | 1.10–1.30 |
| Caustic Soda 76% solid | cwt. | 3.10–3.25 | 3.10–3.25 |
| Chloride of Lime | cwt. | 1.25–1.35 | 1.25–1.35 |
| Sulphuric Acid 60 deg. tank cars f. o. b. shipping point | per ton | 9.00–11.00 | 9.00–11.00 |

**Jobbers' Supplies (Open Market)**

| | | | |
|---|---|---|---|
| **Vegetable Oils—** | | | |
| *Linseed, carloads Spot | gal. | –.92 | –.92 |
| November | | –.91 | –.90 |
| December | | –.91 | –.90 |
| January | | –.90 | –.88 |
| January–April | | –.89 | –.88 |
| Less carload Spot | gal. | –.95 | –.95 |
| 5 Bbls. or less Spot | gal. | –.98 | –.98 |
| Boiled, tank Spot | gal. | –.88 | –.88 |
| Boiled, carloads Spot | gal. | –.94 | –.94 |
| Soya Bean Spot, Tanks | lb. | –.10¾ | –.10½ |
| **Animal Oils—** | | | |
| English Degras | lb. | $–.04¾ | $–.04¾ |
| Domestic Degras, bbls. carloads | lb. | –.03¾ | –.04 |
| *Horse | lb. | –.07½ | –.08 |
| **Oleic Acid—** | | | |
| Dist | lb. | –.09½ | –.09½ |
| Saponified | lb. | –.09½ | –.09½ |
| **Lard Oils—** | | | |
| Prime Winter Strained.. 1 to 1½ | ffa. 40/45c.t. | lb. $.16½ | $.16¼ |
| Extra Winter Strained.. 2 to 4½ | ffa. 40/45c.t. | lb. .13¾ | .13¾ |
| Extra..... 4 to 5 | ffa. 40/45c.t. | lb. .12¾ | .12¾ |
| Extra No. 1..... 7 to 10 | ffa. 40/50c.t. | lb. .11 | .11 |
| No. 1.....15 to 18 | ffa. 40/45c.t. | lb. .10½ | .10½ |
| No. 2.....22 to 23 | ffa. 40/45c.t. | lb. .10 | .10 |
| Prime Edible Tallow under 1⅞ ffa. 40/45c.t. N.Y | | lb. –.09¼ | .09¼ |
| Tallow acidless | | lb. –.11½ | .11½ |
| Lard Stearine | | lb. –.15½ | .15½ |
| Oleo Stearine | | lb. –.11 | .11¼ |
| **Neatsfoot Oil—** | | | |
| Pure | bbls.–lb. | .14¼ | .14¼ |
| Extra | do lb. | 11 | 11 |
| No. 1 | do lb. | 10½ | 10½ |
| Cold pressed | lb. | 17 | 17 |
| **Fish Oils—** | | | |
| Menhaden Oil Light pressed | gal. | $–.65 | –.65 |
| White | gal. | –.70 | –.70 |
| Yellow bleached | gal. | –.68 | –.68 |
| *Herring, tank cars coast | gal. | –.40 | –.40 |
| Whale, extra winter bleached | gal. | .81 | .81 |
| Seal | gal. | Nominal | |
| **Naval Stores—** | | | |
| Turpentine, N. Y | gal. | .94 | .97 |
| Turpentine† | gal. | .87 | .91 |
| Rosin B. N. Y | Bbl. | 5.80 | 5.80 |
| Rosin F. N. Y | Bbl. | 5.80 | 5.80 |
| Rosin B.† | Bbl. | 4.22½ | 4.40 |
| Rosin F† | Bbl. | 4.22½ | 4.40 |
| Rosin Oil 1st run | gal. | .43 | .44 |
| Rosin Oil 2nd run | gal. | .46 | .46 |
| **Pine Tar—** | | | |
| Kiln Burnt | Bbl. | 11.00 | 11.00 |
| Retort | Bbl. | 11.00 | 11.00 |

†Savannah, Ga., market.
‡Carlots.
*Nominal.

# Cooler Weather Booked For Last Of Week

CHICAGO, Nov. 25.—For the first two or three days of this week temperatures will be about normal throughout the Chicago forecast area. After Wednesday considerably colder weather may be expected all over the middle west. In the region of the Great Lakes there will be a great deal of cloudiness with occasional rains or snows, the prediction says. In the upper Mississippi and lower Missouri river valleys the weather will be fair. But only two or three fair days about the middle of the week is scheduled for the Ohio river valley and Tennessee.

Rain fell over all Standard Oil Co. of Indiana territory last Friday except the farthest western states. From Arkansas and Wisconsin to the Atlantic coast the rain was general. On Saturday the Mississippi river was the western boundary but the rain spread northeastward over New England. Except for a few local showers the rest of the week was dry. Some of the local showers early in the week were heavy, the fall being an inch in New Orleans, La., and Chattanooga, Tenn.

Zero weather has not yet invaded the United States. A few points in Canada where reports are made to Chicago have recorded some low temperatures to the amount of —2 but Landor, Wyo., has the record cold figure for the fall at 4 degrees above zero Monday, Nov. 19.

# S. Texas Market Firmer

HOUSTON, Nov. 26.—South Texas lubricants of 500 viscosity are moving good and a stronger market is prevailing on lower viscosity oils. Only the 750 viscosity grade may be said to be weak. Prices are firmer.

One company reports sales ahead that eliminate it from the market until about Feb. 1. and others tell of healthy movements. Another company reports it has sold all lubes it can currently manufacture and could raise its prices if it did not desire to reduce accumulated stocks. It describes its sales roughly as 30 per cent of 200 viscosity, 40 per cent of 300 viscosity, and almost 30 per cent of 500 viscosity. Sales of 750 viscosity are small.

# Minn. Jobbers Active

WASHINGTON, Nov. 23.—The American Bottlers of Carbonated Beverages Association announces that Paul E. Hadlick, who has been with this association for the past three years, is to be secretary of the Minnesota Petroleum Association, starting Jan. 1. He is to succeed S. E. Smith, sales manager of the W. H. Barber, of Minneapolis, who has been acting secretary.

The announcement is made that an active campaign for new members will be conductel by the association unler the direction of Mr. Hadlick. He is the author of a thesis on "The Law of Trade Associations", which is to be published in book form.

## Big Crude Sale To Aid Mexican Seaboard

NEW YORK, Nov. 23.—Earnings of the Mexican Seaboard Oil Co. will undoubtedly be greatly increased by the contract for the delivery of 32,880,000 barrels of Panuco crude to the Standard Oil Co. of New Jersey just closed. Deliveries are to start at the rate of 30,000 barrels a day Feb. 1, 1924. Price is to be on a sliding scale based upon the price of bunker oil at New York.

A statement given out by President Harris Hammond follows:

"A contract has been entered into between International Petroleum Company, operating subsidiary of Mexican Seaboard Oil Co., and Transcontinental Petroleum Company, Mexican subsidiary of Standard Oil Co. of New Jersey, for the sale of 32,880,000 barrels of Panuco oil deliverable at the rate of 30,000 barrels per day over a period of three years, deliveries to commence Feb. 1, 1924. The price to be paid for the oil is on a sliding scale based on the posted price for bunker oil in New York harbor as of the date on which delivery is made. This is the first contract of any magnitude that the Mexican Seaboard has made for the sale of its oil from its Cacalillao holdings.

"It is upon this tract of approximately 28,000 acres that the company has been carrying on part of its intensive drilling campaign. This drilling campaign has resulted in completing wells with a production capacity of approximately 70,000 barrels per day at the time that this contract was entered into as contrasted with approximately 7000 barrels per day in July, 1923.

"In order to handle the 30,000 barrels per day, the Standard Oil Co. will have to construct additional pipe lines and facilities, at a cost of from 1½ million to 2 million dollars. This construction is to be completed by Feb. 1, the date upon which deliveries of oil under the contract will commence."

The Panuco district is now producing roundly 270,000 barrels of heavy oil dai'y, of which approximately 135,000 barrels come from the Cacalilao section. The Cacalilao development is divided into two sections, one known as East Cacali'ao and the other, around Tancoco hill, identified as West Cacalilao.

In West Cacalilao some encroachment of salt water has been recently reported; but the effect of brine upon Mexican heavy oil production is not nearly so great as the decline that se's in immediately after its appearance in such regions as the Southern district light oil fields.

---

HAMILTON, O., Nov. 22.—R. S. Darby has been appointed manager of the Pure Oil Co. station here, succeeding John Wellerding of Cincinnati who has been transferred by the company. Mr. Darby has been in the oil business six years.

# Crude Oil Prices All Fields

### EASTERN FIELDS

| | 1923 Nov. 26 | 1922 High | 1922 Low | 1921 High | 1921 Low |
|---|---|---|---|---|---|
| Bradford-Allegany | $2.60 | Jan. 1....$4.00 | July 19 ..$3.00 | Jan. 1 ...$6.10 | June 29..$2.25 |
| Other Pennsylvania | 2.35 | Jan. 1.... 4.00 | July 19 .. 3.00 | Jan. 1.... 6.10 | June 29.. 2.25 |
| Cabell | 1.20 | Jan. 1.... 2.61 | July 19 .. 1.86 | Jan. 1.... 4.46 | June 29.. 1.11 |
| Corning | 1.25 | Jan. 1.... 2.40 | July 20 .. 1.75 | Jan. 1.... 4.00 | June 29.. 1.20 |
| Somerset | 1.10 | Jan. 1.... 2.40 | July 19 .. 1.65 | Jan. 1.... 4.50 | June 29.. 1.00 |
| Somerset Light | 1.25 | Jan. 1.... 2.65 | July 19 .. 1.90 | Jan. 1.... 4.25 | June 29.. .90 |
| Ragland | .75 | Jan. 1.... 1.25 | July 19 .. 1.00 | Jan. 1.... 2.60 | June 29.. .60 |

Somerset oil run on and after Oct. 1, 1922, takes price of 6 cents higher than above quotation.

### CENTRAL STATES FIELDS

| | | | | | |
|---|---|---|---|---|---|
| Wooster | $1.25 | Jan. 1....$2.70 | Sept. 21..$1.90 | Jan. 1....$4.95 | June 27..$1.80 |
| Lima | 1.43 | Jan. 1.... 2.48 | July 20 .. 1.98 | Jan. 1.... 3.73 | June 27.. 1.58 |
| Indiana | 1.23 | Jan. 1.... 2.28 | July 20 .. 1.78 | Jan. 1.... 3.63 | June 27.. 1.38 |
| Princeton | 1.22 | Jan. 1.... 2.27 | July 20 .. 1.77 | Jan. 1.... 3.77 | June 27.. 1.27 |
| Lodi | 1.25 | Jan. 1.... 2.70 | July 20 .. 1.90 | Jan. 1.... 4.00 | June 27.. 1.80 |
| Illinois | 1.22 | Jan. 1.... 2.27 | July 20 .. 1.77 | Jan. 1.... 3.77 | June 27.. 1.27 |
| Waterloo, Ill | .70 | Jan. 1.... 1.75 | July 20 .. 1.25 | Jan. 1.... 1.75 | June 27.. .75 |
| Plymouth | .60 | Jan. 1.... 1.65 | July 20 .. 1.15 | Jan. 1.... 3.48 | June 27.. .65 |
| Canadian Petrolia | 1.88 | Jan. 1.... 2.88 | July 20 .. 2.38 | Jan. 1.... 4.13 | June 27.. 1.98 |
| Western Ky | 1.10 | Jan. 1.... 2.40 | July 19 .. 1.65 | Dec. 1... 2.40 | June 27.. .58 |

### MID-CONTINENT AND NORTH TEXAS FIELDS

| | | | |
|---|---|---|---|
| Below 33 | .75 | Currie | 1.00 |
| 33-39.9 | 1.00 | Mexia | 1.00 |
| 40 and above | 1.25 | Powell | 1.00 |

### Magnolia's Price Schedule

| | | | |
|---|---|---|---|
| Under 28 | .40 | 40 and above | 1.25 |
| 28-30.9 | .60 | Corsicana, light* | 1.00 |
| 31-32.9 | .75 | Corsicana, heavy | .40 |
| 33-39.9 | 1.00 | Thrall | 1.00 |

*Including Powell

### HUMBLE O. & R. PRICES
(Ranger and Burkburnett)

| | | | |
|---|---|---|---|
| Below 30 | .80 | 36-38.9 | 1.15 |
| 30-32.9 | .90 | 39 and above | 1.30 |
| 33-35.9 | 1.00 | | |

### NORTH LOUISIANA-ARKANSAS FIELDS

| | | | |
|---|---|---|---|
| Caddo, 38 degrees and above | $1.10 | El Dorado, below 33 | 1.00 |
| do 35 to 37.9 | 1.00 | Bull Bayou, 38 and above | 1.05 |
| do 32 to 34.9 | .90 | do 35 to 37.9 | .90 |
| do below 32 | .75 | do 32 to 34.9 | .75 |
| Homer, 35 and above | 1.10 | De Soto | 1.10 |
| do 33 to 34.9 | 1.00 | Crichton | .90 |
| do 31 to 32.9 | .90 | Bellevue | .75 |
| do below 31 | .75 | Smackover, 26 and above | .75 |
| Haynesville, 33 and above | 1.00 | 25 to 25.9 | .60 |
| do below 33 | .90 | 24 to 24.9 | .50 |
| El Dorado, 33 and above | 1.10 | Below 24 Be | .40 |

### GULF COASTAL FIELDS

| | 1923 Nov. 26 | 1922 High | 1922 Low | 1921 High | 1921 Low |
|---|---|---|---|---|---|
| Spindletop | $1.00 | Jan. 1....$1.25 | Dec. 30..$1.25 | Jan. 1....$2.50 | June 13..$ .80 |
| Goose Creek | 1.00 | Jan. 1.... 1.25 | Dec. 30... 1.25 | Jan. 1.... 2.50 | June 13.. .80 |
| Goose Creek "B" | 1.00 | Jan. 1.... 1.25 | Dec. 30... 1.25 | Jan. 1.... 2.50 | June 13.. .70 |
| Sour Lake | 1.00 | Jan. 1.... 1.25 | Dec. 30... 1.25 | Jan. 1.... 2.50 | June 13.. .80 |
| Humble | 1.00 | Jan. 1.... 1.25 | Dec. 30... 1.25 | Jan. 1.... 2.50 | June 13.. .80 |
| Batson | 1.00 | Jan. 1.... 1.25 | Dec. 30... 1.25 | Jan. 1.... 2.50 | June 13.. .80 |
| Hull "A" | 1.00 | Jan. 1.... 1.25 | Dec. 30... 1.25 | Jan. 1.... 2.50 | June 13.. .80 |
| Hull "B" | 1.00 | Jan. 1.... 1.25 | Dec. 30... 1.25 | Jan. 1.... 2.50 | June 13.. .80 |
| West Columbia | 1.00 | Jan. 1.... 1.25 | Dec. 30... 1.25 | Jan. 1.... 2.50 | June 13.. .80 |
| Edgerly | 1.00 | Jan. 1.... 1.25 | Dec. 30... 1.25 | Jan. 1.... 2.50 | June 13.. .80 |
| Vinton | 1.00 | Jan. 1.... 1.25 | Dec. 30... 1.25 | Jan. 1.... 2.50 | June 13.. .80 |
| Jennings | 1.00 | Jan. 1.... 1.25 | Dec. 30... 1.25 | Jan. 1.... 2.50 | June 13.. .80 |
| Dayton | 1.00 | Jan. 1.... 1.25 | Dec. 30... 1.25 | Jan. 1.... 2.50 | June 13.. .80 |
| Saratoga | 1.00 | Jan. 1.... 1.25 | Dec. 30... 1.25 | Jan. 1.... 2.50 | June 13.. .80 |

### WYOMING FIELDS

| | | | | | |
|---|---|---|---|---|---|
| Elk Basin | $ .95 | Jan. 1....$1.90 | Aug. 4...$1.20 | Jan. 1....$3.10 | June 27..$1.00 |
| Grass Creek | .95 | Jan. 1.... 1.90 | Aug. 4... 1.20 | Jan. 1.... 3.10 | June 27.. 1.00 |
| Big Muddy | .45 | Jan. 1.... 1.40 | Aug. 4... .70 | Jan. 1.... 2.75 | June 27.. .50 |
| Salt Creek | .60 | Jan. 1.... 1.40 | Aug. 4... .70 | Jan. 1.... 2.75 | June 27.. .50 |
| Lance Creek | .90 | Jan. 1.... 1.90 | Aug. 4... 1.20 | Jan. 1.... 3.05 | June 27.. .95 |
| Rock Creek | .60 | Jan. 1.... 1.50 | Aug. 4... .80 | Jan. 1.... 2.85 | June 27.. .60 |
| Osage | .90 | Jan. 1.... 1.90 | Aug. 4... 1.20 | Jan. 1.... 3.05 | June 27.. .95 |
| Cat Creek, Mont | .95 | Jan. 1.... 1.90 | Aug. 4... 1.20 | Jan. 1.... 3.10 | June 27.. 1.00 |
| Sunburst, Mont | .70 | ..... | ..... | ..... | ..... |

### CALIFORNIA

| | | | | | |
|---|---|---|---|---|---|
| 14-19.9 | $ .60 | 25-25.9 | .66 | 30-30.9 | $ .71 |
| 20-20.9 | .61 | 26-26.9 | .67 | 31-31.9 | .72 |
| 21-21.9 | .62 | 27-27.9 | .68 | 32-32.9 | .73 |
| 22-22.9 | .63 | 28-28.9 | .69 | 33-33.9 | .74 |
| 23-23.9 | .64 | 29-29.9 | .70 | 34-34.9 | .75 |
| 24-24.9 | .65 | | | 35 and above | .76 |

(Continued from page 97)

from 30 to 60 days it is thought by many that there will not be any large surplus of kerosene on the market until after the first of the year. Many refiners are thoroughly sold up until that time.

### Distillate Moving Slowly

Mild weather over a large part of Indiana territory has kept consumption of home heating distillate to a low level and the market for that product has been slow recently. Re-orders have been few. Due to the kerosene demand refiners have been changing their cuts some and reduced the supply of distillate so that there has been no change in the price.

Lubricating oils are reported to be moving in better volume since the recent reduction in prices. The new sale is more in line with prices quoted by competing groups.

Gas oil and fuel have been soft throughout the Mid-Continent although Texas refiners stiffened their prices temporarily about the middle of the week.

Some Oklahoma fuel is moving at 67½ cents per barrel to resale agents, although the average price is still 70 cents and above. Demand is light from industrial buyers.

## Forbids Penalizing Small Tank Shipments

WASHINGTON, Nov. 26.—The Interstate Commerce Commission, in a decision on National Petroleum Association vs. Atchison, Topeka & Santa Fe et al, has condemned the Pacific coast idea that petroleum and its products shall not be shipped in tank cars of less than 6000 gallons capacity, except at a penalty equal to the charges which would accrue on a shipment of 6000 gallons.

It has found unreasonable a rule in westbound transcontinental freight bureau tariffs, prescribing the minimum on a carload at the shell capacity of the tank "but not less than 600 gallons" and ordered the railroads to make refunds to the Oil City Oil & Grease and the Union Petroleum companies for the overcharges based on that rule.

The regulating body said that if the railroads desired to avoid small car revenue they should make provision for more revenue from the smaller cars, if they could justify higher rates, rather than by prescribing minima which could not be put into cars of the capacity owned by some railroads, notably the Pennsylvania. That company has 512 cars of less than 6000 gallons.

The complaining oil companies said they were not always able to command 6000-gallon cars from their own stock and frequently, in shipping lubricating oil to the Pacific coast, they had to accept the smaller cars tendered by the Pennsylvania.

Railroads on the Pacific coast introduced that rule in 1915 but three years later they had to refund. The rule was introduced into the westbound tariffs in 1919.

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# OIL STOCKS AND FINANCES

## Indian Reduces Net Loss This Year

NEW YORK, Nov. 22.—Indian Refining Co. suffered a net loss of $174,765 in the first half of 1923, the company reports. In first half of 1922, net loss was $895,817. President Theodore L. Pomeroy in a letter to stockholders says:

"The company, through its subsidiary the Indian Pipe Line Corp. is extending its Kentucky pipe line from Owensboro south to the oil fields in Warren county, near Bowling Green; this new line is expected to be in operation before the end of the year, and will effect a substantial saving over shipping by tank cars. The cost of this extension has been financed by an issue of $500,000 first mortgage notes covering the present pipe line and the extension now under construction, maturing in August, 1924, and February and August, 1925. Earnings are expected to be sufficient to retire the bonds as they mature.

"Eight cracking units, in addition to the one previously installed, are nearing completion and we expect to have them in operation within a short time. These, with other important improvements and betterments at your refineries now in progress, will materially improve the operations at the plants and bring them to a much higher state of efficiency.

"Following our policy of developing our own marketing organization by establishing sufficient bulk depots and filling stations to take care of your refineries' output of gasoline and lubricating oil (which will be very materially increased) your company has recently considerably increased the number of its drive-in filling stations. It has also added to its installation of gasoline pumps and lubricating dispensing equipment."

The consolidated income accounts for the first half of the last two years compare:

| | 1923 | 1922 |
|---|---|---|
| Operating profit | $ 683,983 | *$ 37,460 |
| Interest | 97,961 | 120,735 |
| Deprec., depl. | 760,787 | 737,622 |
| Net loss | $ 174,765 | $ 895,817 |

*Loss

The consolidated balance sheet as of June 30, 1923, and 1922, compare:

**ASSETS**

| | 1923 | 1922 |
|---|---|---|
| Cash | $ 247,682 | $ 493,541 |
| Acc'ts, Notes rec. | 2,225,656 | 1,950,690 |
| Advances to agts. | 169,028 | 198,321 |
| Inventories | 4,990,802 | 3,921,152 |
| Investments | 270,716 | 619,911 |
| Property* | 13,823,306 | 13,880,065 |
| Prepaid ins., int. | 139,324 | 166,244 |
| Other deferred items | 705,917 | 705,917 |
| Total | $22,570,431 | $21,935,841 |

**LIABILITIES**

| | | |
|---|---|---|
| Acc'ts payable | $ 1,898,978 | $ 1,321,897 |
| Bank loans | 3,150,000 | 3,315,356 |
| Notes payable | 184,691 | 215,739 |
| U. S. taxes | 930,524 | 930,524 |
| Depletion res. | 3,384,638 | 3,190,524 |
| Minority int. in Central Refining | 277,550 | 280,550 |
| Preferred stock | 2,296,400 | 2,296,400 |
| Common stock | 7,851,800 | 7,851,800 |
| Capital surplus | 4,851,800 | 4,851,800 |
| P. & L. deficit | 2,255,949 | 2,318,749 |
| Total | $22,570,431 | $21,935,841 |

*Less depreciation

## Financial Notes

**White Oil Corp.**—Stockholders approve amendment of certificate of incorporation to provide for sale of property and assets.

**California Petroleum Corp.**—$8,000,000 of 10-year 6½ per cent sinking fund gold coupon bonds due Oct. 1, 1933, list on New York Stock Exchange.

**Producers & Refiners Corp.**—Bankers' interchangeable certificates of deposit for $37,450,850 of common stock listed on New York Stock Exchange.

**Southern States Oil Corp.**—John J. Lentz, Columbus, O., insurance company president and former congressman, and W. A. Robinson, head of W. A. Robinson & Co., New Bedford, Mass., elected directors.

**Pennok Oil Co.**—Company's dividends, regular and extra, 20 cents each, for last quarter are double those for the previous quarters this year.

**Cities Service Refining Co.**—$2,500,000 first mortgage 10-year 7 per cent guaranteed gold bonds offered through New York bankers at 97 and accrued interest to yield 7.4. The bonds are redeemable at 105 and convertible into Cities Service stock on or before July 1, 1928.

## Oil Dividends

| | Amount | Payable | Stock of Record |
|---|---|---|---|
| National Tran. q. | 50c | Dec. 15 | Nov. 30 |
| Oil Lease Dev. m. | 10c | Dec. 15 | Nov. 30 |
| Pennok q. | 20c | Dec. 22 | Dec. 15 |
| do extra | 20c | Dec. 22 | Dec. 15 |
| Pure 8% pfd. q. | 2% | Jan. 1 | Dec. 15 |
| do 6% pfd. q. | 1½% | Jan. 1 | Dec. 15 |
| do 5¼% pfd. q. | 1¼% | Jan. 1 | Dec. 15 |
| S. O. Kansas q. | 50c | Dec. 15 | Nov. 30 |
| Western States m. | 1% | Nov. 30 | Nov. 15 |

## Cleveland Stock Market

| | Par value | Nov. 23 Bid | Asked | 1922 High | Low |
|---|---|---|---|---|---|
| National Refg. | 25 | 35 | 38 | 55 | 31¾ |
| do pfd. | 100 | ... | 123½ | 123 | 118 |
| Paragon Refg. | 25 | 5¼ | 5½ | 16¼ | 10¼ |
| do pfd. | 100 | ... | 50 | 80 | 75 |
| Fred G. Clark | [illegible] | | | | |

## Pennok Oil's Earnings Are Running High

NEW YORK, Nov. 23.—Pennok Oil Co. reports for third quarter of 1923 net $541,648 after expenses, depreciation and depletion but before federal taxes, equivalent to $1.44 a share of the $10 stock. For the first nine months of the year, net was $2,360,530.

Company's balance sheet as of Sept. 30 shows current assets of $2,810,103 as against current liabilities of $78,000. Total assets are $8,363,492. Income accounts for the third and first three quarters of the year follow:

| | 3rd Quarter | 9 Months |
|---|---|---|
| Gross income | $840,995 | $3,190,078 |
| Operating and general expenses | 110,214 | 342,505 |
| Net income | $730,781 | $2,847,573 |
| Other income | 59,450 | 309,824 |
| Total income | $790,231 | $3,156,397 |
| †Depreciation, depletion, etc. | 248,583 | 795,867 |
| Net income | $541,648 | $2,360,530 |
| Dividends | 75,000 | 225,000 |
| *Surplus | $466,648 | $2,135,530 |

*Before federal taxes.
†Includes inventory losses, abandoned leases and reserve against deferred charges.

## Pacific Oil Earnings Lower This Year

NEW YORK, Nov. 23.—Pacific Oil Co. reports net profit of $6,871,572 for first nine months of 1923, a decrease of $2,332,507 from the net for the corresponding time of 1922. Net profit was equivalent this year to $1.96 a share on the outstanding 3,500,000 shares as compared with $2.63 last year. These amounts are after depreciation, depletion, federal taxes, and all other charges.

Income accounts for the two nine-month periods compare:

| | 1923 | 1922 |
|---|---|---|
| Gross earnings | $14,404,274 | $16,409,155 |
| Operating expenses | 5,801,360 | 5,443,167 |
| Ordinary taxes | 954,355 | 617,393 |
| Net profits | $ 7,648,559 | $10,348,595 |
| Other income | * 1,712,994 | 1,446,486 |
| Gross income | $ 9,361,553 | $11,795,081 |
| Deprec. & deple. res | 2,212,415 | 2,281,030 |
| Federal tax reserve | 277,566 | 309,971 |
| Surplus | $ 6,871,572 | $ 9,204,080 |

*Includes dividends of 1½ per cent each for three quarters from Associated Oil Co. and $70 dividend on stock of Associated Supply Co.

NEW YORK, Nov. 22.—Sinclair Consolidated Oil Corp.'s French distributing subsidiary, the Compagnie Industrielle les Petroles, reports a profit of 1,208,000 francs for the 1922-23 fiscal year as compared with 8,093,000 francs for the preceding year.

# Transactions In Oil Shares On New York Stock Exchange

| 1922 High | 1922 Low | 1923 High | 1923 Low | Listed Capital | Par Value | Stocks | Div. Rate | Last Paid | Transactions week ended Nov. 23 Sales | First | High | Low | Last | Ch'ge |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 135½ | 91 | 134 | 98¼ | $40,000,000 | $100 | Associated Oil | 1½Q | July 25, 23 | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | 27⅛ | 24⅞ | 40,060,500 | 25 | do new | ..... | ..... | 10,500 | 25¼ | 26⅜ | 25⅜ | 25¾ | + ½ |
| 1575 | 117 | 160 | 98¾ | 50,000,000 | 100 | Atlantic Refining | $1Q | Sept. 15, 23 | 2,500 | 105 | 111 | x105 | 111 | +5 |
| 119½ | 114 | 120 | 115 | 20,000,000 | 100 | do pfd | 1¾Q | Nov. 1, 23 | 100 | 117 | 117 | 117 | 117 | 0 |
| 56¼ | 19¾ | 35 | 9⅞ | 13,000,000 | 25 | Barnsdall Corp. A | .62½ | Apr. 30, 21 | 17,100 | 11 | 13⅞ | 11 | 13⅜ | +2⅜ |
| 39 | 17 | 22 | 6 | 3,713,275 | 25 | do B | .62½ | Apr. 30, 21 | 2,400 | 7 | 9 | 7 | 8¾ | +1¾ |
| 15¾ | 6¾ | 9⅛ | 1¼ | 150,000 | N.P. | Caddo Central O. & R. | ..... | ..... | 200 | 1⅞ | 1⅞ | 1⅞ | 1⅞ | + ⅛ |
| 71⅞ | 43⅛ | 29¾ | 17⅛ | 17,377,000 | 25 | California Petroleum | 4S¾Q | Dec. 1, 23 | 96,300 | 21½ | 24 | 21 | 23¾ | +7⅛ |
| 98½ | 83 | 110½ | 90½ | 12,089,500 | 100 | do pfd | 1¾Q | Oct. 1, 23 | 900 | 95 | 97 | 95 | 97 | +1⅞ |
| 54 | 31⅝ | 62¼ | 22¾ | 1,217,427 | N.P. | Cosden & Co | $1Q | Aug. 1, 23 | 107,400 | 25½ | 30½ | 25¼ | 29⅜ | +3⅞ |
| 102½ | 93½ | 109¾ | 85 | 6,998,000 | 100 | do pfd | 1¾Q | Dec. 1, 23 | 100 | 87 | 87 | 87 | 87 | —1½ |
| 73¾ | 37¼ | 54 | 25 | 19,830,000 | 100 | General Asphalt Co | ..... | ..... | 15,600 | 30½ | 34 | 30 | 32½ | +1 |
| 111 | 68½ | 83 | 60 | 7,416,100 | 100 | do pfd | 1½Q | Dec. 1, 23 | 1,200 | 65 | 66 | 64¼ | 65 | 0 |
| 78 | 45 | 50¼ | 40 | 3,236,600 | 100 | Gilliland Oil Pfd | 2 | May 15, 21 | ..... | ..... | ..... | ..... | ..... | ..... |
| 91¾ | 61¼ | 78 | 40¾ | 25,000,000 | 100 | Houston Oil Co | .... | ..... | 12,300 | 48¾ | 56½ | 48¾ | 54 | +4¾ |
| ..... | ..... | 11¼ | 3⅜ | 450,000 | N.P. | Independent Oil & Gas | ..... | ..... | 1,000 | 4¼ | 4½ | 4¼ | 4⅜ | + ⅜ |
| 25 | 12 | 19 | 1 | 5,000,000 | 25 | Indiahoma Refining | ‡.15 | July 1, 21 | 2,900 | 1⅝ | 2 | 1½ | 2 | + ⅜ |
| 11⅝ | 5⅜ | 8½ | 2⅛ | 7,830,450 | 10 | Indian Refining | .50 | Dec. 15, 20 | 200 | 5⅜ | 5⅜ | 5⅜ | 5⅜ | 0 |
| 20¼ | 12½ | 19¼ | 7⅛ | 671,280 | N.P. | Invincible Oil | ..... | ..... | 26,700 | 8¼ | 10⅜ | 8 | 10⅛ | +1⅞ |
| 3 | ¼ | ⅝ | ⅛ | 25,709,510 | 10 | Island Oil & Trans | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 7½ | 1½ | 8⅛ | ¼ | 14,662,890 | 10 | Kansas & Gulf | ..... | ..... | 600 | ¼ | ¼ | ¼ | ¼ | 0 |
| ..... | ..... | 23⅝ | 16 | 250,000 | N.P. | Maracaibo Oil | ..... | ..... | 12,500 | 19½ | *23⅝ | 19½ | 23⅜ | +3⅝ |
| 46⅜ | 22¾ | 59⅜ | 17½ | 1,017,504 | N.P. | Marland Oil Co | $1Q | July 1, 23 | 90,200 | 21⅜ | 28¼ | 21½ | 27 | +5⅜ |
| 322 | 106¾ | 293 | 182 | 46,942,800 | 100 | Mexican Petroleum | 4Q | Oct. 20, 23 | ..... | ..... | ..... | ..... | ..... | ..... |
| 108 | 79¼ | 105¼ | 100¼ | 12,000,000 | 100 | do pfd | 2Q | Oct. 20, 23 | ..... | ..... | ..... | ..... | ..... | ..... |
| 34½ | 14½ | 23¾ | 5¾ | 444,894 | N.P. | Mexican Seaboard | .50Q | June 1, 23 | 19,300 | 13 | 15¾ | 12⅝ | 15 | +2 |
| 32⅛ | 12 | 23¼ | 6 | 261,000 | N.P. | do V. T. C. | .50Q | June 1, 23 | 8,100 | 12½ | 14½ | 12½ | 14¼ | +1½ |
| 16 | 11 | 12¼ | 3½ | 29,791,450 | 10 | Middle States Oil | .30Q | July 1, 23 | 70,400 | 3⅝ | 5 | 3⅝ | 5 | +1⅜ |
| 62 | 47 | 67 | 31 | 39,626,000 | 25 | Ohio Fuel Supply | .56¼ | Oct. 15, 23 | 200 | 31¼ | 31¼ | 31¼ | 31½ | — ⅜ |
| 4¾ | 1¾ | 3⅛ | ⅜ | 5,359,425 | 5 | Oklahoma P. & R. | 2 | Apr. 1, 21 | 3,200 | 1 | 1⅝ | 1 | 1½ | + ½ |
| 69⅛ | 42½ | 48⅞ | 31¼ | 3,500,000 | N.P. | Pacific Oil Co | $1SA | July 20, 23 | 59,100 | 37⅜ | 41⅝ | 36¾ | 40⅞ | +3¾ |
| 100⅞ | 48⅞ | 93½ | 53 | 48,292,450 | 50 | Pan-American P. & T. | $2Q | Oct. 20, 23 | 59,400 | 57¼ | 64¾ | 56⅞ | 62⅞ | +5⅛ |
| 95¾ | 44 | 86 | 50½ | 81,085,900 | 50 | do B | $2Q | Oct. 20, 23 | 137,300 | 55⅜ | 61¾ | 55 | 59⅝ | +3⅞ |
| 12 | 3 | 6¼ | 1¼ | 198,770 | N.P. | Panhandle P. & R. | ..... | ..... | 1,000 | 1½ | 2¼ | 1½ | 2¼ | +1 |
| 78 | 61 | 68 | 51 | 2,935,200 | 100 | do pfd | 2Q | July 2, 23 | ..... | ..... | ..... | ..... | ..... | ..... |
| 59¼ | 28¼ | 69⅝ | 19¾ | 1,183,282 | N.P. | Phillips Petroleum | .50Q | Oct. 1, 23 | 101,800 | 24 | 29½ | 23⅜ | 29⅛ | +5⅛ |
| 12 | 4 | 6 | 1¾ | 29,622,925 | 25 | Pierce Oil Corp | ..... | ..... | 10,500 | 2 | 2⅞ | 2 | 2⅝ | + ¾ |
| 71 | 32 | 44½ | 18 | 15,000,000 | 100 | do pfd | 2 | Feb. 1, 22 | 2,000 | 27 | 28½ | 26 | 27 | — ½ |
| 51 | 24⅛ | 58⅛ | 17 | 37,450,850 | 50 | Producers & Refiners | .50Q | Sept. 15, 23 | 30,700 | 17¾ | 21¼ | 17¾ | 20⅝ | +3⅜ |
| 49 | 36 | 49⅛ | 36 | 2,845,350 | 50 | do pfd | 87½Q | Nov. 5 23 | 1,500 | 45⅞ | 47 | 45⅞ | 47 | +2 |
| 88⅜ | 26½ | 32 | 16¼ | 69,993,325 | 25 | Pure Oil Co | 37½Q | Dec. 1, 23 | 26,900 | 16½ | 19¼ | 16⅜ | 18⅞ | +2¼ |
| 102¾ | 94 | 100 | 82½ | 13,000,000 | 100 | do 8% pfd | 2Q | Oct. 1, 23 | 500 | 87 | 88 | 87 | 88 | + ½ |
| 67 | 47¼ | 55⅛ | 40½ | 676,520 | 13.40 | Royal Dutch, N. Y. shares | 2.15 | Aug. 10 | 8,300 | 46¾ | 49¾ | 46 | 49⅛ | +2⅜ |
| 48⅛ | 34⅝ | 41¼ | 29¼ | 157,949 | £1 | Shell Transport | 1.13⅛ | July 26, 23 | 500 | 31⅝ | 33 | 31⅝ | 33 | — ½ |
| 13¼ | 12⅛ | 19¼ | 12⅜ | 8,000,000 | N.P. | Shell Union | .25Q | Sept. 29, 23 | 65,800 | 13¾ | 15⅞ | 13¾ | 15⅛ | +1½ |
| 96⅜ | 90 | 95 | 90 | 20,000,000 | 100 | do pfd | 1½Q | Nov. 15, 23 | 1,000 | 91½ | 92¼ | 91½ | 92¼ | + ¾ |
| ..... | ..... | 16 | 6½ | 6,469,100 | 10 | Simms Pet | ..... | ..... | 10,700 | 8⅝ | 10⅝ | 8⅝ | 10 | +1⅜ |
| 38¾ | 18¼ | 39⅜ | 16 | 4,479,565 | N.P. | Sinclair Consolidated | .50Q | Nov. 30, 23 | 69,900 | 18¼ | 21⅜ | 18 | 21⅜ | +2⅞ |
| 102 | 97½ | 99⅛ | 80¼ | 19,278,600 | 100 | do pfd | 2Q | Nov. 15, 23 | 300 | 84 | 86 | 84 | 86 | +5 |
| 11⅞ | 8¾ | 35 | 12½ | 20,579,090 | 25 | Skelly Oil | ..... | ..... | 21,800 | 16 | 21½ | 16 | 19¾ | +3⅞ |
| 135 | 91¾ | 64⅛ | 47⅛ | 231,867,100 | 25 | S. O. California | .50Q | Sept. 15, 23 | 61,300 | 53½ | 57¾ | x52¾ | 55¾ | +2⅞ |
| 250½ | 169 | 44¼ | 30⅞ | 501,274,200 | 25 | S. O. New Jersey | .25Q | Sept. 15, 23 | 50,100 | 32 | 36⅞ | 32 | 35⅝ | +3⅜ |
| 120 | 113¾ | 118¼ | 114¾ | 199,972,900 | 100 | do pfd | 1¾Q | Sept. 15, 23 | 3,000 | 117½ | 117½ | 117⅜ | 117½ | + ¼ |
| 10¼ | 4 | 6¾ | 2 | 451,708 | N.P. | Superior Oil | .50 | Dec. 20, 20 | 2,100 | 2 | 2½ | 2 | 2½ | + ⅜ |
| 52¼ | 42 | 52⅞ | 34¾ | 164,450,000 | 25 | The Texas Co | .75Q | Sept. 29, 23 | 50,800 | 38½ | 41⅜ | 37¾ | 40¾ | +2⅜ |
| 82¾ | 18½ | 24¾ | 5½ | 8,380,340 | 10 | Tex. Pac. Coal & Oil | .25Q | June 30, 23 | 16,100 | 6½ | 9 | 6½ | 8⅝ | +2 |
| 154 | 109¾ | 144 | 94 | 49,996,400 | 100 | Tide Water Oil Co | 2 | Dec. 30, 21 | 5,100 | 100¾ | 123½ | 100¾ | 115 | +13½ |
| 20½ | 7½ | 14½ | 1¼ | 2,000,000 | N.P. | Transcontinental Oil | ..... | ..... | 20,300 | 2⅛ | 2⅝ | 2 | 2⅝ | + ⅛ |
| 134¾ | 85⅞ | 99¾ | 81 | 18,000,000 | 100 | Union Tank Car Co | 1¼Q | Dec. 1, 23 | ..... | ..... | ..... | ..... | ..... | ..... |
| 113 | 102 | 114 | 106 | 12,000,000 | 100 | do pfd | 1¾Q | Dec. 1, 23 | 100 | 108 | 108 | 108 | 108 | — ⅜ |
| 34 | 25 | 30⅜ | 20 | 460,000 | N.P. | White Eagle Oil & Ref | .50Q | Oct. 20, 23 | 6,000 | 21½ | 23⅞ | 21½ | 23¼ | +2¼ |
| 11⅜ | 2⅛ | 5⅞ | ¼ | 959,046 | N.P. | White Oil Corp. | ..... | ..... | 2,700 | ½ | ½ | ½ | ½ | 0 |

*New High  †New Low  ‡In Scrip  xEx—Dividend  Total Sales 1,328,500

# Standard Oil Stock Traded In New York Curb Market

| 1922 High | 1922 Low | 1923 High | 1923 Low | Outstanding Capital | Par Value | Stocks | Div. Rate | Last Paid | Transactions Week Ended Nov. 23 Sales | First | High | Low | Last | Ch'ge |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 25 | 16⅝ | 19¾ | 13½ | £3,000,000 | £1 | Anglo-American Oil | 46½S.A. | May 15, 23 | 3,400 | 14¼ | 15 | 14 | 14⅞ | + ⅝ |
| 12½ | 4⅞ | 7⅝ | 2½ | (sh)500,000 | N.P. | Atlantic Lobos | ..... | ..... | 500 | 2¾ | 2¾ | 2¾ | 2¾ | — ⅛ |
| 610 | 335 | 150 | 113 | $ 1,000,000 | 100 | Borne-Scrymser | 4S.A. | April 16, 23 | 20 | 140 | 140 | 140 | 140 | +5 |
| 110 | 83 | 94½ | 69 | 10,000,000 | 50 | Buckeye Pipe Line | $1.75 Q | Sept. 15, 23 | 500 | 70 | 74½ | 70 | 74 | +4½ |
| 225 | 175 | 237 | 207 | 1,500,000 | 100 | Chesebrough Mfg | 3½ Q | Sept. 29, 23 | ..... | ..... | ..... | ..... | ..... | ..... |
| 118 | 104 | ..... | ..... | 1,000,000 | 100 | do pfd | 1¾Q | Sept. 29, 23 | ..... | ..... | ..... | ..... | ..... | ..... |
| 153 | 125 | 50 | 32½ | 10,000,000 | 25 | Continental Oil | 50 Q | Sept. 15, 23 | 800 | 38 | 39¾ | 38 | 39¾ | +2⅜ |
| 49 | 28 | 47½ | 15¾ | 1,500,000 | 25 | Crescent Pipe Line | 37½ Q | Sept. 15, 23 | ..... | ..... | ..... | ..... | ..... | ..... |
| 185 | 115 | 168 | 85 | 3,000,000 | 100 | Cumberland Pipe Line | 12A | Dec. 15, 23 | 200 | 107 | 113 | 107 | 113 | +1 |
| 103½ | 79½ | 117 | 87 | 5,000,000 | 100 | Eureka Pipe Line | 2Q | Nov. 1, 23 | 80 | 88 | 93 | 87 | 93 | +6 |
| 62 | 40 | 78 | 55 | 16,000,000 | 100 | Galena Signal Oil | 1Q | Sept. 29, 23 | 145 | 60¼ | 64 | 60¼ | 64 | +3⅜ |
| 105 | 100 | 105 | 104 | 4,000,000 | 100 | do new pfd | 2Q | Sept. 29, 23 | ..... | ..... | ..... | ..... | ..... | ..... |
| 114 | 104 | ..... | ..... | 2,000,000 | 100 | do old pfd | 2Q | Sept. 29, 23 | ..... | ..... | ..... | ..... | ..... | ..... |
| 267 | 212½ | 41¼ | 28 | 43,750,000 | 25 | Humble Oil & Ref | 30Q | Oct. 1, 23 | 2,400 | 33½ | 36¾ | 33½ | 35 | +1½ |
| 198 | 154 | 171 | 115 | 20,000,000 | 25 | Illinois Pipe Line | 8 S.A. | June 30, 23 | 395 | 121½ | 148 | 121½ | 136½ | +1½ |
| 130¾ | 97½ | 123 | 92 | 39,222,750 | 25 | Imperial Oil, coupons | 75 Q | Dec. 1, 23 | 3,060 | 97 | 105½ | 97 | 102½ | +4¼ |
| 111 | 84 | 103 | 78 | 5,000,000 | 50 | Indiana Pipe Line | $2 Q | Nov 15, 23 | 265 | 80 | 85 | †78 | 85 | +4 |
| 27½ | 14 | 24⅞ | 13¼ | (sh)7,188,138 | N.P. | International Petroleum | 25c | June 30, 23 | 23,300 | 14⅞ | 16¾ | 14¾ | 16½ | +1⅝ |
| 259 | 150 | 168 | 123 | 180,000,000 | 100 | Magnolia Petroleum | 1Q | Oct. 5, 23 | 1,035 | 129 | 135 | 128 | 133¾ | +5¾ |
| 31⅛ | 23 | 29 | 19½ | 6,362,500 | 12½ | National Transit | 50Q | Sept. 15, 23 | 1,100 | 19¾ | 21¾ | 19¾ | 21¾ | +1¾ |
| 214 | 117 | 137 | 85 | 5,000,000 | 100 | New York Transit | 2Q | Oct. 15, 23 | 140 | 86 | 90 | †85 | 90 | +4 |
| 127 | 90 | 110 | 96 | 4,000,000 | 100 | Northern Pipe Line | 5 S.A. | July 1, 23 | 150 | 98½ | 102½ | 98½ | 102 | +5 |
| 365 | 71 | 85½ | 48¾ | 60,000,000 | 25 | Ohio Oil Co | 3Q | Sept. 29, 23 | 7,100 | 56½ | 65⅞ | 56½ | 64½ | +8½ |
| 44⅞ | 16 | 28¾ | 10½ | 10,000,000 | 25 | Penn-Mex Fuel | ..... | ..... | 600 | 21½ | 23 | 21½ | 23 | +3⅞ |
| 750 | 520 | 700 | 152 | 54,000,000 | 100 | Prairie Oil & Gas | 2Q | Oct. 31, 23 | 10,165 | 183 | 203 | 181 | 201 | +8 |
| 325 | 224 | 335 | 93 | 81,000,000 | 100 | Prairie Pipe Line | 2Q | Oct. 31, 23 | 6,560 | 94 | 98¼ | 93½ | 97½ | +3¼ |
| 405 | 340 | 212½ | 161 | 4,000,000 | 100 | Solar Refining Co | 5 S.A. | June 20, 23 | 30 | 179 | 179 | 175 | 175 | +10 |
| 110 | 77 | 116 | 87 | 10,000,000 | 100 | Southern Pipe Line | $2Q | Dec. 1, 23 | 110 | 89 | 93 | †87 | 91 | +1 |
| 249 | 150 | 195 | 100 | 20,000,000 | 100 | South Penn Oil | 1½Q | Sept. 30, 22 | 1,515 | 105½ | 123 | 105½ | 121 | +14¾ |
| 70½ | 50½ | 88¼ | 66¾ | 3,500,000 | 100 | Southwest Pa. Pipe Lines | 2Q | Oct. 1, 23 | 10 | 76½ | 76½ | 76½ | 76½ | + ¾ |
| 135 | 58¾ | 69⅞ | 49¼ | 220,181,638 | 25 | S. O. Indiana | 62½Q | Sept. 15, 23 | 99,400 | 55⅛ | 58⅞ | 54¾ | 58¼ | +3 |
| 190 | 41 | 57 | 36½ | 8,000,000 | 25 | S. O. Kansas | 50Q | Sept. 15, 23 | 2,100 | 38¾ | 41½ | 38¾ | 41 | +2¼ |
| 131 | 76½ | 138 | 83 | 17,500,000 | 25 | S. O. Kentucky | $1Q | Oct. 1, 23 | 6,200 | 95 | 101¾ | 95 | 100¼ | +4¾ |
| 217 | 170 | 285 | 186 | 3,000,000 | 100 | S. O. Nebraska | 5 S. A. | Dec. 15, 22 | 40 | 210 | 210 | 204 | 210 | +5 |
| 675 | 41⅛ | 49⅝ | 35⅛ | 225,000,000 | 25 | S. O. New York | 35Q | Sept. 15, 23 | 18,840 | 40¼ | 43¾ | x40⅛ | 42⅝ | +1¾ |
| 585 | 261 | 317 | 270 | 14,000,000 | 100 | S. O. Ohio | 2½Q | Oct. 1, 23 | 110 | 276 | 284 | x276 | 279 | +4 |
| 119½ | 113½ | 118 | 116 | 7,000,000 | 100 | do pfd | 1¾Q | Dec. 1, 23 | ..... | ..... | ..... | ..... | ..... | ..... |
| 37 | 30 | 39 | 21 | 1,806,200 | 100 | Swan & Finch | 2½S.A. | Nov. 1, 19 | ..... | ..... | ..... | ..... | ..... | ..... |
| 710 | 36¼ | 55¼ | 40 | 60,000,000 | 25 | Vacuum Oil Co | 50Q | Sept. 20, 23 | 29,200 | 51¾ | 54⅜ | 51¾ | 53¾ | +1¾ |
| 32 | 20 | 28 | 19 | 100,000 | 10 | Washington Oil Co | $2A | Jan. 31, 22 | ..... | ..... | ..... | ..... | ..... | ..... |

# MODERN DRIVE-IN STATIONS

THIS is a special triangular station designed and manufactured by us for The Sun Oil Co.

Filling stations like this—original and artistic in design—attract customers.

We design and manufacture special stations to conform to your ideas or you can select from any of our 40 Standard Types —Any Shepard Station can be erected with your own men.

**The Arthur B. Shepard Company, Inc.**
Architects and Manufacturers
General Offices & Shops
Cleveland, Ohio, U. S. A.



# EDWARD

A STOP VALVE TO MEET EVERY REFINERY CONDITION

**The Edward Valve & Manufacturing Co.**
East Chicago, Indiana

# VALVES


## NEW YORK BONDS

Week ended Nov. 24.

| | High | Low | Last | Ch'ge |
|---|---|---|---|---|
| Atlantic Ref. deb 5s | 97¾ | 97 | 97½ | — ⅜ |
| Barnsdall 8s | 96 | 95 | 95 | —1 |
| Calif. Pet. sf 6½s | 96½ | 96 | 96½ | 0 |
| Empire 7½s | 90½ | 89⅞ | 89⅞ | 0 |
| Humble O.& R.5½s | 97 | 96¾ | 96¾ | — ¼ |
| Marland 8s ser A | 105 | 101¼ | 104½ | +3⅞ |
| do 8s w war | 119 | 114 | 119 | +3 |
| do 7½s ser B | 104 | 101 | 104 | +2¾ |
| do 7½s war | 120 | 111⅞ | 116 | +9¾ |
| Mex.Pet. of Del.cvt.8s | 107 | 104½ | 106⅝ | +2⅛ |
| Pan-Amer. P.&T.7s | 103½ | 103¼ | 103½ | — ½ |
| Pierce Oil deb. 8s | 80 | 75 | 80 | +4½ |
| Prod. & Refrns 8s | 107 | 106 | 106⅝ | + ⅛ |
| do 8s with war | 109½ | 109½ | 109½ | 0 |
| Sinclair Cons. col. 7s | 93 | 91⅜ | 93 | +1½ |
| do 6½s | 87½ | 85⅜ | 87¼ | +1¼ |
| Sinclair Crude Oil 6s | 96 | 95½ | 96 | 0 |
| do 5½s | 96¼ | 96 | 96 | 0 |
| Sinclair Pipe Line sf 5s | 81 | 80⅛ | 80⅜ | — ⅛ |
| Tidewater Oil 6½s | 102⅝ | 102⅜ | 102½ | + ⅛ |
| Union Oil of Calif. 6s | 99 | 98 | 98⅜ | — ⅜ |
| Union Tank Car 7s | 103⅝ | 103⅝ | 103⅝ | + ⅝ |

## NEW YORK CURB BONDS

Week Ended Nov. 23

| | High | Low | Last | Ch'ge |
|---|---|---|---|---|
| Anglo-Amer. Oil 7½ | 102 | 101¾ | 101¾ | — ¼ |
| Cities Serv. 7s C | 89 | 89 | 89 | 0 |
| do 7s D | 89 | 88⅜ | 89 | + ¼ |
| Galena Sig. 7s | 103 | 103 | 103 | + ¾ |
| Gen. Asphalt 8s | 104 | 103¼ | 103¼ | — ¾ |
| Gulf Oil 5s | 94½ | 94¼ | 94½ | — ⅜ |
| Maracaibo 7 new | 230 | 200 | 230 | +33 |
| Phil Pet. 7½w war | 101 | 99¼ | 101 | +1½ |
| S. O. N. Y. 7s '25 | 101½ | 101½ | 101½ | — ¼ |
| do 7s 26 | 103¾ | 103¾ | 103¾ | 0 |
| do 7s 27 | 105 | 104½ | 104½ | — ¼ |
| do 7s 28 | 105⅜ | 105⅜ | 105⅜ | 0 |
| do 7s 30 | 106¾ | 106⅜ | 106¾ | + ¾ |
| do 7s 31 | 107 | 106¾ | 107 | 0 |
| do 6½s | 106 | 105¾ | 105⅞ | — ⅛ |
| Sun Oil 7s | 101½ | 101½ | 101½ | — ¼ |
| do 6s | 98¼ | 98¼ | 98¼ | — ¼ |
| Union Oil Cal. 6s 26 | 99½ | 99½ | 99½ | + ⅛ |
| United Oil Prod. 8s | 76 | 70 | 74 | —2½ |
| Vacuum Oil 7s | 106½ | 106¼ | 106¾ | + ¼ |
| Valvoline 7s | 102¼ | 102¼ | 102¼ | — ¼ |

## NEW YORK CURB MARKET

| 1922 High | 1922 Low | 1923 High | 1923 Low | Par Value | Stocks | Transactions Week Ended Nov. 23 Sales | First | High | Low | Last | Ch'ge |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 13 | 6¾ | 10 | 4¼ | 10 | Ark Nat. Gas | 1,300 | 4½ | 4⅞ | † 4¼ | 4¾ | — ¼ |
| 9¾ | 3¼ | 7⅝ | 3⅛ | 25c | Carib. Synd. ctf | 3,800 | 3½ | 3¾ | 3⅜ | 3¾ | + ¼ |
| 242 | 158 | 193 | 128 | 100 | Cities Service | 1,350 | 132½ | 137½ | 132 | 137 | +4 |
| 72 | 51 | 70 | 64 | 100 | do pfd | 3,400 | 66⅞ | 67⅛ | 66⅞ | 67 | 0 |
| 25½ | 16¾ | 19½ | 12⅝ | 10 | do bankers sh | 2,800 | 13¾ | 13¾ | 13 | 13¾ | + ⅜ |
| 5 | 1¼ | 7⅞ | 1½ | N. P. | Creole Syndicate | 11,400 | 2 | 2¾ | 2 | 2⅝ | + ½ |
| | | 18¾ | 5 | N. P. | Derby O. & R. | 2,100 | 7½ | 8 | 7 | 7½ | 0 |
| 2¼ | .65 | 1 | .25 | 5 | Federal Oil | 6,800 | .35 | .36 | .35 | .36 | —.08 |
| 19½ | 8⅞ | 19¼ | 16⅛ | N. P. | Fensland Oil | | | | | | |
| | | 38 | 24 | 25 | General Petroleum | 500 | 33⅛ | 33⅛ | 33 | 33 | +2 |
| 9⅝ | 2⅝ | 7⅜ | 3 | N. P. | Gilliland Oil | | | | | | |
| 7¾ | 78 | 2 1/16 | .50 | 10 | Glenrock Oil | 800 | .60 | .69 | .60 | .69 | +.08 |
| 71½ | 48½ | 68¼ | 45¾ | 25 | Gulf Oil Corp | 7,300 | 54 | 59 | 54 | 56¼ | +2 |
| 26½ | 2¼ | 4 | 1 | N. P. | Kirby Petroleum | 2,600 | 2⅛ | 2¾ | 2⅛ | 2½ | + ⅜ |
| 49¼ | 39⅞ | 58 | 45 | N. P. | Mammoth A | | | | | | |
| 10 | 1 | 5 | 1½ | N. P. | Marland of Mexico | 39,700 | 2¾ | 5 | 2¾ | 4¾ | +2 |
| 19 | 9⅞ | 20¼ | 12⅞ | 10 | Mountain Prod | 14,200 | 13⅜ | 14⅜ | 13⅜ | 14¼ | + ¾ |
| 13¾ | 5¾ | 15½ | 8¼ | 5 | Mutual Oil Co | 45,700 | 9⅝ | 11⅜ | 9⅝ | 11 | +1¼ |
| | | 5¾ | 3½ | 5 | New Bradford | 6,500 | 3½ | 4⅛ | 3⅜ | 3⅞ | 0 |
| 83 | 40 | 52 | 16 | 10 | New Eng. Fuel Oil | 400 | 23¼ | 23¼ | 22 | 22 | |
| 3 | .67 | 1 11/16 | .50 | 10 | Omar O. & G | 1,800 | .60 | .65 | .60 | .65 | +.03 |
| | | 13 | .76 | N. P. | Peer Oil Corp | 200 | | .98 | .81 | .98 | +.18 |
| 9¾ | 4⅞ | 14¾ | 9⅜ | 10 | Pennok Oil | 4,900 | 12¼ | 13¼ | 12¼ | 13 | + ¾ |
| 14¾ | 10 | 15⅛ | 6¼ | 10 | Salt Creek Cons | 900 | 7 | 7 | 6½ | 6⅞ | + ⅝ |
| 22 | 12⅛ | 25¼ | 15½ | 10 | Salt Creek Prod | 5,800 | 17⅜ | 18½ | 15½ | 18⅜ | +1⅛ |
| 5 | 2⅝ | 4⅞ | .80 | 5 | Sapulpa Refining | 2,700 | 90 | 90 | 80 | 80 | —5 |
| 3⅛ | .80 | 4 | .63 | 5 | Seaboard O. & G | 14,500 | .95 | 1.00 | .90 | .95 | —.05 |
| 21 | 12¼ | 26⅝ | 11⅜ | N. P | Southern States | 138,500 | 17⅝ | 20⅛ | 17⅝ | 20½ | +2¾ |
| 34 | 23 | 30 | 19 | 5 | Ventura Cons | | | | | | |
| 7⅞ | 2¼ | 10⅞ | 4 | 5 | Wilcox O. & G | 32,500 | 4⅞ | 5¾ | 4⅞ | 5½ | + ¾ |

## PITTSBURGH STOCK EXCHANGE

| 1922 High | 1922 Low | 1923 High | 1923 Low | Par Value | Stocks | Transactions Week Ended Nov. 23 Sales | First | High | Low | Last | Ch'ge |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 12⅝ | 8¼ | 10 | 4¼ | 10 | Arkansas Nat Gas | 3,920 | 4⅝ | 4⅞ | 4¼ | 4¾ | 0 |
| 55½ | 21 | | | 25 | Barnsdall Corp A | | | | | | |
| 38½ | 20 | | | 25 | do B | | | | | | |
| 112¾ | 64½ | 112½ | 33 | 100 | Columbia Gas | 120 | 33 | 33 | †33 | 33 | |
| 49 | 42 | | | N. P. | Cosden & Co | | | | | | |
| 2⅞ | 2⅛ | 2⅛ | 2⅛ | 10 | Kansas & Gulf | | | | | | |
| 31⅛ | 40 | 27 | 22¾ | 25 | Lone Star Gas | 350 | 24½ | 24½ | 24⅜ | 24⅜ | —⅛ |
| 58⅞ | 45⅝ | 58 | 51 | 50 | Manuf. Light | 695 | 52 | 52½ | 52 | 52½ | +½ |
| 45 | 23¾ | 59¼ | 30⅜ | N. P | Marland Oil | | | | | | |
| 15⅝ | 12⅜ | 12 | 11¼ | N. P. | Middle States | | | | | | |
| 23 | 15⅛ | 19 | 11 | 1 | Ohio Fuel Oil | 100 | 11½ | 11¾ | 11⅜ | 11¾ | |
| 62 | 44½ | 65½ | 30⅜ | 25 | Ohio Fuel Supply | 755 | 31⅜ | 31½ | 31¼ | 31¼ | —¼ |
| 26¾ | 19 | 23 | 18⅝ | 25 | Okla. Nat. Gas | 920 | 22⅞ | 23 | 22⅞ | 23 | + ¼ |
| 4 | 2 | 2⅞ | 1⅞ | 5 | Okla. Prod. & Ref | | | | | | |
| | | 74½ | 74½ | 50 | Pan-American B | | | | | | |
| 11 | 6 | 10½ | 5¾ | 5 | Pittsburgh O. & G | 437 | 5¾ | 7½ | †5¾ | 6¾ | +¾ |
| 65¾ | 57½ | 53½ | 50 | 13.40 | Royal Dutch | | | | | | |
| 14⅞ | 8¾ | 14 | 5½ | 10 | Salt Creek Cons | 8,155 | 5⅞ | 7½ | †5½ | 7 | +⅞ |
| 37¾ | 8 | 35⅞ | 32 | N. P. | Sinclair Cons | | | | | | |
| 47⅞ | 46½ | | | 25 | The Texas Co | | | | | | |
| 14⅝ | 10 | 13½ | 7 | N. P. | Tidal Osage | 1,100 | 8 | 8 | 8 | 8 | |
| 18⅜ | 9⅜ | 14 | 10¼ | N. P. | Transcontinental | | | | | | |
| 25 | 24½ | 29½ | 23¾ | 25 | Union Nat. Gas | 110 | 28 | 28 | 28 | 28 | 0 |

## PITTSBURGH CURB MARKET

| 1922 High | 1922 Low | 1923 High | 1923 Low | Par Value | Stocks | Transactions Week Ended Nov. 23 Sales | First | High | Low | Last | Ch'ge |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 15 | 15 | | Central Ky. Gas | | | | | | |
| 4⅞ | 1 | 1½ | .30 | 10 | Colombia Synd | | | | | | |
| 3 | 1⅞ | 2⅜ | .26 | 5 | Duquesne Oil | | | | | | |
| | | 37 | 10 | 10 | Forest Oil | | | | | | |
| | | 1¼ | 1 | 1 | Grant Oil | | | | | | |
| 71 | 50 | 68 | 46½ | 25 | Gulf Oil Corp | 420 | 56⅝ | 58 | 56½ | 58 | +4 |
| .12 | .02 | .03 | .02 | 1 | Homer Union | | | | | | |
| | | 24½ | 16⅛ | N. P. | International Pet | 100 | 16⅛ | 16⅛ | 16⅛ | 16⅛ | |
| 9 | 6½ | 8½ | 4 | 10 | Marshall Oil | 200 | 4¾ | 4¾ | 4¾ | 4¾ | |
| .42 | .18 | .36 | .15 | 1 | Mexican Wyoming | 11,000 | .15 | .17 | .15 | .17 | +.02 |
| | | 3⅝ | 3⅝ | | New Bradford Oil | | | | | | |
| 1½ | 1 | 2¾ | 1⅛ | | Oklahoma Eastern | 1,900 | 1⅝ | 1¾ | 1⅝ | 1¾ | +⅛ |
| 1¼ | 1 | 2 | .60 | 10 | Omar Oil & Gas | | | | | | |
| 52 | 29 | 22½ | 7 | 5 | States Oil | | | | | | |
| | | 80 | 80 | 100 | Southwest Pa. Pipe | | | | | | |
| .09 | .03 | .05 | .03 | 1 | Twin City O. & G | | | | | | |

*New High †New Low xEx Dividend